President's Address

DELIVERED AT THE OPENING OF THE

SEVENTEENTH INTERNATIONAL MEDICAL CONGRESS.

By SIR THOMAS BARLOW, Bart., K.C.V.O., M.D., F.R.S.,

PHYSICIAN EXTRAORDINARY TO HIS MAJESTY THE KING; CONSULTING PHYSICIAN, UNIVERSITY COLLEGE HOSPITAL; PRESIDENT OF THE ROYAL COLLEGE OF PHYSICIANS, LONDON.

GENTLEMEN,—A whole generation has passed away since the International Medical Congress last met in London.

What a magnificent galaxy of talent in medicine, surgery, and pathology was gathered round the Prince of Wales, who was our Royal Patron at that time!

It is fitting that we should follow the admonition of Ecclesiasticus and praise famous men and the fathers that begat us. Our President, Sir James Paget, was a great clinical pathologist. His mind was stored with all that was then known of the morbid anatomy of surgical disease and injury, and of the family relationships of the different diatheses. He was a splendid teacher and possessed a lucid eloquence and a moral fervour not excelled by any of his contemporaries. Jenner and Gull, Wilks and Gairdner were our great teachers of clinical medicine. Each of them based his knowledge on the sure foundation of the *post-mortem* room and the hospital wards. We shall not see their like again, for their careers began before the days of specialization, and they were amongst the last of the great general physicians of our time. Hughlings Jackson was the philosophical exponent of the new neurology. Many of his forecasts were verified by the experiments of David Ferrier, of which I may say there was a remarkable demonstration at the 1881 Congress. Jonathan Hutchinson was the patient accurate recorder of the natural history of disease in multitudinous departments, and characteristically enough he was the organizer of our congress clinical and pathological museum. The pioneers of abdominal surgery—Spencer Wells, Thomas Keith, and Lawson Tait—were with us. Huxley, the most brilliant expositor of natural science of his time, discoursed to us on the relations of medicine and biology. William Bowman, whose work on the minute anatomy of the eye was the foundation of modern English ophthalmology, was one of our most useful members.

Last of all the Englishmen whom I will mention was our great Lister, then in the zenith of his grand career. He has but lately been taken from us in the fullness of years, and we commemorate him to-day in the medal of our Congress.

Our foreign brethren were not less illustrious in the bede-roll of medical and surgical achievement. Virchow, the Nestor of morbid anatomy, honoured and beloved by us as by his own countrymen, delivered a fine historical discourse on the value of pathological experiments. Volkmann gave a critical survey of the recent advances of surgery. Robert Koch gave what may truly be called a path-breaking demonstration of the microbial findings in several morbid conditions, and he illustrated their characteristic growth on different organic media. Von Langenbeck and Esmarch spoke for military surgery; Donders and Snellen for ophthalmology. Baccelli, Murri, and Pantaleoni represented Italian medicine. From the United States came Austin Flint, the accomplished physician and master of physical examination; Billings, prince of medical bibliographers; and Bigelow the famous surgeon.

The great French school was represented by Brown-Séquard and Charcot, Lancereaux and Bouchard and Verneuil and a host of others; but there was one great Frenchman with us who towered aloft amongst all his contemporaries, and who, though not a medical man, exercised by his discoveries a profound influence on the medicine of the world, and that was Louis Pasteur. In his address on vaccination in relation to chicken cholera and splenic fever, he gracefully linked his most recent researches with the time-honoured labours of Edward Jenner on cow-pox.

Time fails me to speak of other great and honoured names, but surely we may say there were giants in those days.

Now let us realize to ourselves that the Congress of 1881 marked not the parting of the ways, but emphasized the notable fact that the parting of the ways had already been passed. The times of superstition, of empiricism, and of transcendental speculation had vanished. But what of the period of accurate and detailed observation? That was neither superseded nor completed, but it was already supplemented and redirected into more fruitful channels by the new development of experimental methods.

If it had not been for the work of Pasteur, Lister, and Koch, which was expounded to us thirty years ago, how poverty-stricken would have been the output of medicine and surgery in this our Congress of 1913!

The great men—both observers and experimenters—of whom I have spoken were like mountain peaks towering above the plain of ordinary medical humanity, and we sometimes sadly ask where are the mountain peaks now? That is a shallow and unenlightened question. For indeed, thanks to the unremitting labours of workers in multitudinous paths, we have attained a glorious heritage—not of high mountain peaks and deep valleys—but a lofty and magnificent tableland of well ordered and correlated knowledge.

Consider the bare fact that the fifteen sections of the 1881 Congress have, by the inevitable specialization and concentration of work, become twenty-three sections and three subsections in 1913, but so imperative is the demand for mutual conference that we have no less than fourteen meetings arranged in which sections have found it desirable to discuss various problems in joint session.

In what ways have we pursued and expanded the work of our fathers? First, unquestionably, in the development and application of bacteriology. Koch's great discovery of the life-history of the tubercle bacillus was published in the year after the London Congress, and what an enormous body of knowledge has grown out of that discovery! We are learning to discriminate between the essential and causal factors of disease and the concomitants, such as combined and terminal infections. The by-products and the antibodies developed to neutralize bacterial life, of which we see the beneficent rôle in Nature's own cure of an acute specific disease, have been made to yield their share in two important methods of treatment—namely, sero-therapy and vaccine-therapy.

We have also faced the problem of strengthening the phagocytosis of the patient. I need not dwell on the history of the Klebs-Loeffler bacillus and the causation of diphtheria, nor on the indubitable efficacy of the most important of all the antitoxins, nor on the singular parallelism between the bacteriological findings in atypical throat exudations with the ambiguous symptomatology which clinical observation reveals. Nor need I dwell on the extension of bacteriological investigation of typhoid fever which has been fruitful in new measures of prophylaxis and defence of the community.

We have learnt something about the natural history of the ultra-minute organisms which as "filter passers" elude our microscopic investigation.

There are still great gaps in our knowledge of the bacteriology of the acute specific diseases, but it is a gain to have learnt from the study of recent epidemics that infantile paralysis must be grouped with the infective diseases, and, thanks to Flexner, we know many of the reactions of its elusive organism.

Great advances have been made in protozoology, in helminthology, and indeed in the whole subject of the relation of parasites to the diseases of man and animals. In tropical diseases these studies, as well as bacteriology, have brought about a rich harvest. Malta fever, plague, malaria, sleeping sickness, have all yielded more or less of their secrets. Sometimes the whole cycle of the disease has been discovered, rationalized in every respect, and its successful treatment has been evolved.

In other cases, as in malaria, sleeping sickness, and yellow fever, where only parts of the natural history of the disease have been elucidated, nevertheless enough real knowledge has been acquired to enable important, though sometimes costly, hygienic measures to be successfully employed. Here it is fitting that we should offer our homage to our American brethren for their splendid

hygienic work in Cuba, in Panama, in the Philippines, and in Costa Rica, and for the efforts which they are organizing for a world-wide crusade against ankylostoma disease.

Chemical pathology has widened our knowledge and our resources, and the mystery of immunity has been to some extent illuminated.

The detailed examination of the morphological elements and the chemical characters of the blood and of other body fluids has eventuated in the rewriting of some of our physiology, and the pathological extension of the knowledge thus gained has improved the diagnosis and the treatment of several diseases. Thirty years ago Ord demonstrated to the Congress of that time examples of the disease which he had defined as myxoedema, but which, with surer instinct, Gull had described as a cretinoid state in adults. The gradual evolution of the doctrine of thyroid insufficiency and of its therapeutics is a model of induction; and this important discovery has given a great impetus to the whole study of internal secretions, as well as to the employment of organic extracts, of which the last and most interesting is that of the pituitary body.

The empirical and then the experimental study of small variations in the ordinary diets of adults and children and infants in different social strata and in different countries has been fruitful in many unexpected ways. The great milk problem is still with us, but we have learnt the blunders of our early generalizations. Cleanliness in the milk supply from start to finish has a far more exhaustive meaning than in days gone by. The curious disease beri-beri, which some of us have long thought had parallelisms with scurvy, has been shown, at all events amongst rice-eating people, to depend on the loss of the nutritive material just internal to the pericarp, which the ordinary process of milling removes.

The patient study of chronic alcoholism has opened up a new chapter in nervous diseases. The routine traditional employment of alcohol in disease has happily been largely discredited. The open-air treatment of all forms of tuberculous lesions has had a wide indirect influence, not only on the treatment of other chronic ailments, but on the daily life of the people.

The recognition and radical treatment of oral sepsis due to damage to the gums in consequence of various disorders of the teeth has been followed by remarkable benefit. A strong case has been made out for intestinal stasis as a cause of various forms of malnutrition and for operative measures in dealing with slight mechanical obstructions; on this subject we hope for further evidence.

The additions to diagnosis yielded by *x*-ray exploration are like the creation of a sixth sense, and its curative applications and those of radium are the opening of a new chapter of therapeutics.

I ventured to hint that medicine had now and then led to the rewriting of some chapters of physiology, and I may add that recent researches on diseases of the heart have led to the re-editing of neglected knowledge of the minute structure of heart muscle, and of orderly and disorderly mechanism of its movements.

Of the magnificent triumphs of the surgery of this generation it is beyond my power adequately to speak, but I can refer to the wide fields opened up through the beneficent protection of Listerism. We are staggered by the reasoned and calculated audacity of our brethren when sinuses of the skull are drained, cerebral abscesses evacuated, cerebral tumours removed, the pituitary body even being investigated, when pleuro-pericardial adhesions are freed, to the great relief of the heart, when different parts of the alimentary canal are short-circuited and when one or other damaged viscus is removed either entirely or in part. The active co-operation of surgeons and physicians has gained for us some knowledge of what Moynihan and others have happily described as "living pathology," and we gratefully acknowledge the invaluable information of correlated symptoms, signs, and morbid conditions, and the statistics of comparative frequency which surgical experience has brought to the common store.

The supreme gain, after all, is that many more useful lives are saved than in the last generation, that the realm of grave and hitherto incurable disease is invaded on every side, and that the danger of operation *qua* operation is retreating to a vanishing point.

It is impossible even to enumerate the varied ways in which medicine has co-operated with economics, social legislation and philanthropy, which we sum up briefly as public health. The school house and the scholars, the home of the poor, the colliery, and the factory, the dangerous occupations, the sunless life of the mentally deficient, have benefited, and will benefit still more, by its friendly invasion. And I venture to foretell that, not many years hence, every department of life and work shall be strengthened and purified and brightened by its genial and penetrating influence.

Surely I have said more than enough to justify my contention that we have come into a goodly heritage, and that that heritage is like a lofty and magnificent tableland of knowledge and efficiency. The gaps are being filled; we are no longer isolated, but are working side by side on adjacent areas which are inseparably connected. Every day we gain fresh help from the auxiliary sciences, and we realize more and more the unity and the universality of medicine.

Brethren from foreign lands, we thank you for the treasures, new and old, of observation and experiment, and of a ripe experience, which you have brought to this Congress for the common weal.

I venture to affirm that the output of work of the Congress week in its twenty-three goodly volumes will astonish civilized countries by its amount and its solid worth.

I welcome you to our dear country, this ancient home of freedom, and I speak not only for the medical men of the British Isles but for our brethren of the Overseas Dominions, who join with us in our cordial greeting.

May this Congress add to the common store of fruitful and useful knowledge; may it increase our good fellowship, our mutual understanding and co-operation, and may it help to break down the barriers of race and country in the onward beneficent march of world medicine.

Address in Medicine,

ON

MEDICAL PROGNOSIS: ITS METHODS, ITS EVOLUTION, ITS LIMITATIONS.

DELIVERED AT THE SEVENTEENTH INTERNATIONAL CONGRESS OF MEDICINE.

BY A. CHAUFFARD, M.D.,

PROFESSOR OF CLINICAL MEDICINE IN THE UNIVERSITY OF PARIS; MEMBER OF THE ACADEMY OF MEDICINE.

MR. PRESIDENT, LADIES, AND GENTLEMEN,—In asking me to address to-day this great medical assembly, the Committee of the Seventeenth International Congress of Medicine has conferred on me a signal honour for which I desire in the first place to express my very sincere thanks. I should feel most unworthy of this high distinction were I not conscious that it is offered much less to my person than to French medical science. The medical men of France have come in large numbers to this Congress with the desire of learning, of making known their work, and also of maintaining and tightening the bonds of amity and esteem which link them to their colleagues of every nation, and more especially of the great country which is receiving them so splendidly to-day. Since, for one brief instant, it is given to me to be their spokesman before you, allow me to enter immediately upon the theme which I shall have the honour to consider in this address.

EVOLUTION.

The subject I purpose to discuss is that of medical prognosis considered in regard to its methods, its evolution, its limitations.

Medical prognosis! Is it not for us the daily problem, the anxious question which is constantly being put to us and which we put to ourselves? Ever since there have been sick patients and men who endeavour to relieve them and to restore them to health, the same query has come up in every case: Will a cure be effected, and by what therapeutical means? Prognosis and treatment—such were from the very first the two instinctive needs, the two immediate demands of the sick man. It was only at

a later period, at a more advanced stage of medical culture, that the need of first making a diagnosis arose, a notion of purely intellectual and logical order. But if diagnosis has been the latest of our acquisitions, it has now taken its proper rank—the first. What physician, failing an accurate diagnosis, could venture on a prognosis or prescribe a treatment? An entirely modern idea—but one which should imbue our minds nowadays—is that of defining in each particular case the mutual relationship between those three fundamental elements of medical judgement—to know, to foresee, to act. Instinctive in the remote ages and, later, hesitating and seeking its way for a long period of time, the act of the physician tends to become more and more rational and systematic. It is the passing from art to science, which our epoch is striving hard to achieve, often with success.

In this uninterrupted evolution medical prognosis has not remained at a standstill; almost before our own eyes, and by the mere progress of contemporary science, it has undergone a gradual change. Its methods are being modified, its limitations are being carried further back every day; it is in a state of perpetual transformation. The present time is perhaps a suitable one for a general survey of our present position and for an appraisement of our acquisitions and desiderata. Such is the task I intend to attempt before you this afternoon.

The Hippocratic Era.

In the history of medical prognosis a large place should be reserved for the Hippocratic era, and it is impossible to peruse these venerable writings without a feeling of deep admiration. In those days the physician, having no technical means of investigation at his command, could naturally have but a purely objective vision of his patient; but how penetrating was this vision, how skilful in grasping, co-ordinating, and interpreting the most minute details! What a searching study, what a constant scrutiny of the prognostic signs derived from the general condition of the patient and revealed by his facies, his position in bed, the movements of his hands, his breathing, his sweating, the state of his hypochondria, his dropsical swellings, his sleep, his urine, his stools, his vomit, his sputum. The book on "Prognosis" is only concerned with acute febrile diseases, but from its descriptions there is nothing to be omitted. "The best physician appears to be the one who knows how to know beforehand"; such is the opening sentence of those admirable pages, so full of clinical observation and medical philosophy. The body should always be considered as a whole and "all things should always be judged by the study of signs and the estimation of their relative value." The same idea is upheld by Plato in his *Charmides* when he says: "It is impossible to cure a part without the whole." The same principle pervades all the Hippocratic works, and the famous doctrine of the *Crises* is but a systematization of prognosis in acute diseases. Thus prognosis was considered as a comprehensive survey of disease and its probable course. From the very first Hippocratic medicine had placed itself at the centre-point and had attempted to synthetize clinical prognosis.

Such are the earliest sources to which we must ever revert. Those primordial notions have lost none of their value, and if we have added much we have parted with nothing. To this day those objective data are amongst those that no clinician has the right to neglect, and the general impression they suggest at the patient's bedside leads us to pretty much the same prognostic conclusions as of old.

For more than twenty centuries medical observation went no further and was restricted to the same elementary information, until the day when new methods were added to the ancient practices, rendering possible the analysis of morbid disturbances. Thenceforth it is by the analytical method, with the help of a more and more penetrating technique, that medical inquiries progress; at the same time, more direct paths are open to prognosis.

The Modern Era.

The modern era begins with Auenbrugger and Corvisart, who introduced percussion; with Laënnec, the immortal inventor of auscultation; with Richard Bright, the creator of renal pathology. By those memorable discoveries the whole of medicine was at once transformed. Direct exploration became possible and efforts were made, in Laënnec's own words, "to place internal organic lesions on the same line with surgical diseases in regard to diagnosis." To detect morbid changes in the living subject, to ascertain their degree and evolution, amounted to creating modern diagnosis and to giving prognosis a more certain basis. It amounted also to demonstrating all the importance of a new science, pathological anatomy, which by its precise descriptions was going to corroborate and check clinical investigation and to direct medicine for a time towards the exclusive quest for lesions and for organic changes. To detect the lesion in the living subject, to identify it in the cadaver and to deduce therefrom diagnosis and prognosis, such became the system of what was to be, for more than half a century, *Organicist Medicine*—a noble system which contained a large share of truth, but a narrow doctrine which tended to confuse the lesion with the disease which caused it. Doubtless, to a certain extent, the lesion *is* the disease in the course of evolution; but the anatomy of the dead body affords but the conclusion, the terminal condition. *Anatomical prognosis* therefore soon found its limitations. It is probably in the field of neuro-pathology that it has achieved its greatest triumphs, and the whole of Charcot's work rests on the anatomo-clinical method rationally applied. Need I add that if we are mere organicists no longer, we have nevertheless cast aside or forgotten no part of our predecessors' labour? Their work rests on the ancient fabric like a new geological stratum: on this stratum we have erected our modern constructions, more extensive and solid because they rest on larger and deeper foundations.

Unceasing Progress.

The succeeding stage is marked by the influence of Claude Bernard's memorable work. With him pathology became abnormal physiology, and disease became a disturbance of normal functions. We can recognize a morbid state and alter its probable course and consequences only if we are acquainted with the *functional disturbances* it causes. Without this essential notion how could we scientifically conceive the prognosis of a lesion of the heart, or liver, or kidney, or of the digestive or respiratory systems? Modern effort tends each day to greater advances along the paths opened up by Claude Bernard. With our improved instruments and laboratory technique, through our researches on the blood and body fluids and on cytological reactions, we aim at gauging accurately the functional value of the various structures, the organic reactions of defence, the substitutions and compensations as well as the morbid synergical actions that take place in the human system. We physicians now strive to reason and to act as physiologists, or, better still, as biologists. Our system of analysis makes use at the same time of the methods, now closely associated, of clinical medicine and of experimental pathology. It attempts to dissociate the infinitely complex problems of pathogenesis and the relationship between causation and secondary reaction. Nor can we arrive at a prognosis unless we take all those factors into account.

And so, after this long circuit, after all this analytical work, we find ourselves returning—as in the early ages of medicine—to Hippocratic prognosis, to the synthetic and comparative consideration of what the ancients used to call the *State of forces*. Whether from a historical or a practical standpoint, we thus find that prognostic investigation has progressed by successive stages from anatomical lesions to functional disturbances and chemical changes, until it has reached the stage where judgement is based on criteria of a dynamic and vital order. How can we estimate the prognosis of heart disease if we do not take into account the functional value of the myocardium, of hepatic disease if we ignore the ureogenetic function of the liver, of nephritis if we know not the degree of renal permeability and the amount of urea in the blood serum? What should we know about the future of a diabetic subject if we did not ascertain the state of his nutritional exchanges, if we did not detect the first signs of the acid intoxication which threatens him? Again, what should we know about a gouty subject if we knew nothing of his blood pressure or the working of his kidneys? If diagnosis consisted simply, as Pinel would have it, in "assigning to a given disease its proper place in Nosology" it would be a most fruitless and conventional

effort. Our conception is a very different one; for us diagnosis signifies the recognition, as perfect and precise as our means of investigation will allow, of a morbid condition considered in regard to its origin, its present state, its future course. Thorough diagnosis is almost one with scientific prognosis—at least they constitute two closely connected ways of considering the same fact. If we remember all that we owe to contemporary haematology, to biological chemistry, to electrology, to skiagraphy, we see how inseparable are the notions of diagnosis and prognosis thus obtained. Of equal importance, both for diagnosis and prognosis, are the temperature charts, the curves of urine and weight, the cardio-vascular tracings such as we have learnt to take and to interpret from Marey and from James Mackenzie; the research in the blood of bactericidal properties, of agglutinins, of opsonins; the analysis, both qualitative and quantitative, of the various constituents of the serum. We arrive at the same conclusion if we consider the history of the leucocytes of the blood, with their chemiotactic and phagocytic reactions.

Thus prognosis takes its immediate share in all the advances of diagnostic technique. This unceasing progress might make us imagine that there are no limits to its possibilities. It certainly is far from having reached its future boundaries, although we feel hemmed in by those of the present day. These we shall try to define later.

Remote Prognosis.

Medical prognosis, then, is a very complex matter necessitating the consideration of multiple criteria. Yet, if thus strictly considered, it would still be very incomplete, inasmuch as it would not be taking the future into sufficient account.

Now to us physicians the future is a preoccupation inseparable from the actual disease we are treating. This is a recent notion, it is true; for it was formerly imagined that a disease cured had no morrow. How great was this error and how far we now are from such a fallacy! Every day this question of remote prognosis arises, and it may be said to have made its appearance in science with the discovery by Bouillaud of rheumatic endocarditis. The French physician had doubtless more than one forerunner, and it is in England that the early work was accomplished. David Pitcairn, physician to St. Bartholomew's Hospital, was the first to observe that rheumatic fever is a common cause of heart disease; he taught this fact to Matthew Baillie, a great pathologist who, in the words of Sir Dyce Duckworth, deserves to be called "the English Morgagni of his time." With Wells, David Dundas, this notion acquired greater precision, and at the same time Odier and Matthey, in Geneva, reached a similar conclusion. Finally, in 1818, James Johnson recognized and described the cardiac metastasis of rheumatic fever.

When Bouillaud took up the subject he was better armed than his predecessors. Through systematic auscultation of his patients, and through *post-mortem* examinations, he discovered and described rheumatic endocarditis. From that time on the prognosis of rheumatic fever was a different matter. Next to—or rather before—immediate prognosis now arose the question of remote prognosis. When we are called to a case of rheumatic fever the first thing we want to know is whether the heart is affected or not. Over and beyond the present illness we see and fear possible valvular disease; we try to avert it or to arrest its progress. The prognosis for the morrow takes the lead of the prognosis of the day.

The various zymotic diseases afford many examples analogous to this classical instance of chronic heart disease originating with rheumatic fever and progressing afterwards for years and years as an autonomous disease, with its special association of anatomical lesions and functional disturbances. The Pasteurian discoveries have provided us with a general theory of infection; they have shown the preponderating part played by microbic toxins in the many visceral diseases, acute or chronic, seen every day in clinical medicine as well as in experimental pathology. How many patients appear to be cured of an acute infection, and yet their health may remain affected, perhaps for ever! Innumerable instances might be quoted; the kidney of patients having had scarlet fever or pneumonia, the arterial system of enteric patients, post-infectious lesions of the ductless glands, trophic disturbance and arrest of growth following infantile paralysis. How often, after apparent cure has been effected, do we find morbid conditions progressing which our best efforts do not always arrest!

If we pass from acute to chronic infections this question of remote prognosis becomes of still greater moment. Let us consider an individual who has recently contracted syphilis. Do we for a moment imagine that after we have cured the secondary manifestations all is over, and that our task is at an end? So little do we think so that in our apparently quite healthy subject we go on applying the treatment, we periodically ascertain the result of Wassermann's reaction, we keep in mind the possibility of late tertiary manifestations or of vascular syphilis in the shape of aneurysm, or again of one of those redoubtable cerebro-spinal localizations which constitute the darkest chapter in the history of syphilis. We have got to the point that we are wondering whether numerous lesions, apparently commonplace, are not due, wholly or in part, to remote syphilitic infection. For my part I am convinced that such is often the case with arterio-sclerosis and with certain chronic conditions of the liver, kidneys, and myocardium.

What we have just said of syphilis is equally true of tuberculosis, and those two great infections share between them a very wide field in pathology. Tuberculosis, like syphilis, has far-reaching and tardy consequences. Inoculated in infancy it may come to life in the adult age, and sometimes even in old age; it is often after many years that the real gravity of a long-forgotten glandular enlargement or of a pleural effusion long since cured is revealed. Moreover, apart from the typical forms of tuberculosis, caseous and follicular, we have learnt to distinguish numerous varieties of atypical or inflammatory tubercle, of which the true nature is demonstrated by experimental inoculation. This generalization has perhaps been carried too far; it would tend to make us believe that the greater number of pathological findings are referable to remote syphilitic or tuberculous infection. This, in my opinion, would be an exaggeration; but the fact remains that in regard to syphilis and tubercle we know where prognosis begins, but we cannot foresee its limits. No physician can assure his patient of absolute cure without any possibility of some tardy sequel, whether specific or atypical in character.

The same might be said about gout, lead poisoning, alcoholism, etc. The acute disturbance disappears, but remote sequelae are always possible. We might almost say that nothing is forgotten in the system, and that any adulteration of a tissue or body fluid leaves its trace. The discovery of anaphylaxis by Charles Richet affords the best demonstration of this fact, and we can repeat, in the words of that distinguished scientist, that "we have a *humoral* personality which makes us different from other individuals: this personality of our humours is due precisely to the various ingestions and intoxications which have affected our system and left their indelible traces."

If we bear these notions in mind the scope of prognosis in morbid conditions is found to be remarkably extended. The pathological life of an individual appears no longer merely as an interrupted series of isolated episodes; but we try to discern its unity, to follow its continuous course, and to take into account the sudden and sometimes final deviations and the new pathological directions that may be given to the organism by an intercurrent disease. On these points, as well as on many others, the findings of modern clinical medicine approximate to and complete the teachings of tradition. The "humoral personalities" of Charles Richet seem very closely connected with the ancient doctrine of the "diatheses," recently defended with such conviction and eloquence by Sir Dyce Duckworth.

Family, Collective, and Social Prognosis.

Let us now extend a little farther the scope of our medical foresight. Our prognosis will then include the future of *the patient's descendants*. I cannot dwell at length on this very important aspect of my subject, but it is evident that the possibility of inherited syphilis or tuberculosis, that the transmission of abnormal humoral conditions, such as haemophilia and congenital haemolytic icterus, or of family taints like those so often met with in neuro-pathology, do aggravate those several

diseases by placing them in the group of hereditary pathological conditions.

This is not all. Next to the prognosis concerning the individual and his descendants we must consider *collective prognosis*. This is a question of a practical order which originated quite recently with the contemporary investigations on *germ carriers*. Take, for instance, a school where a case of diphtheria has broken out. Will this be an isolated case or will it become the starting point of a small localized epidemic? The preventive measures to be taken will depend to a great extent on our decision, and we must be guided by the direct examination of the other children in the school. We must ascertain whether amongst them there are not some who are carrying Loeffler's bacillus in their naso-pharyngeal membrane or in their tonsils. The number of these bacilli carriers will afford us precise and valuable information.

It is also to direct examination that we must turn if in a military unit, company, or squadron there suddenly appears one of those cases, often so rapidly fatal, of cerebro-spinal meningitis. In the last few years we have had in France too many opportunities of witnessing the birth and growth of such local foci of meningococcal infection, and our military colleagues are fully aware of their duties in this respect. In cases of this kind the systematic quest for meningococcal carriers is immediately proceeded with, and it very speedily shows whether the cases observed are sporadic or whether they are the first signs of a more or less extensive epidemic. We are thus led to form the *epidemiological prognosis*, which to a certain extent remains distinct from *individual prognosis*.

Finally, above the individual, the family, and the small communities, there is the *race*, the human species considered as a whole. Now, considering as social diseases tuberculosis, syphilis, alcoholism, shall we not be reaching the highest point that can be attained by medical prognosis? How far do we thus find ourselves from the old belief of the physician who, having treated his patient, thought he had done all that could be expected of him! We now feel that this would be an inadequate conception of our duty, and that not infrequently the particular patient cannot, and must not, be separated from his multifarious connexions with the rest of the human race. All our legislative measures in regard to disinfection and preventive vaccination find their justification in the social prognosis of disease. I need not dilate on this subject in the country of Jenner, the land of efficient prophylaxis. Is it not also in this great London that as a result of the memorable work of Sir Francis Galton and his school a new science came into being, eugenics, which held its first congress here? By improving, according to Galton's ideas, the racial qualities, both physical and mental, of the generations to come, and also by surrounding with all possible care the life of the child before and after birth, in conformity with Pinard's teaching, it seems to me that we are transferring the notion of collective and social prognosis into the domain of prophylaxis, for the greater good of the race.

Starting, then, from the daily observation of the sick, the physician has therefore unceasingly looked higher and further. Every day he realizes better that he cannot neglect the individual, or the family, or the race; that in a social body where so many nefarious forces are working together to bring about the degeneration of man he must bring to all men the tribute of his beneficent knowledge and useful labour.

THERAPEUTICAL ADVANCES.

Does our progressively extended prognosis, based on the use of new methods and on a wider comprehension of the far-reaching effects of disease, deal with facts that are always identical with themselves? Is the prognosis of a given disease immutable? If not, why and how does it vary?

To admit the immutability of medical prognosis would be to declare that our therapeutics have not progressed. Now, surely, it is not at the present time that such a dispiriting opinion could be upheld. In the last forty years, before our very eyes, the whole of scientific and practical medicine, undergoing an incredibly rapid evolution, has been wonderfully transformed. The problems of pathogenesis, our means of clinical investigation, our methods of treatment have all assumed a new aspect, and the prognosis of all morbid conditions has thus been deeply modified. I think it can be said that there is almost no group of diseases the gravity of which has not been notably attenuated in recent years. No doubt there are still too many cases where the physician feels powerless; but even then his lack of power is no longer so absolute. The cancer problem is always before us, but we cannot deny that, thanks to *x* rays and radium, thanks to improvement in surgical technique, thanks also to recent advances in chemical treatment, our means of action have become less scanty and more often efficient. We may be unable to modify the prognosis of a given lesion: cerebral haemorrhage, pulmonary embolism have lost none of their gravity. But the changes in the arterial or venous systems which give rise to those serious accidents are better known to us; we can prevent them or treat them with greater success. Thus even in the least favourable cases we have gained some ground.

On the other hand, we might quote many instances, especially in the domain of the infections, where to-day's prognosis is widely different from that of former times. Rheumatic fever nowadays is no longer what it was in Bouillaud's time: salicylic medication has made another disease of it. Since the introduction of Brandt's treatment our enteric patients are no longer the same, and the results already obtained by antityphoid bacteriotherapy enable us to look forward to a near and decisive advance. We cannot forget what diphtheria was before the discovery of diphtheritic antitoxin by Behring and Kitasato and the splendid therapeutical deduction brought forward by Roux at the Congress of Budapest. The morbidity and mortality tables have since demonstrated throughout the world what a change has been brought about in the prognosis of diphtheria. Even the most terrible and relentless of diseases—rabies—has met its master, and the antirabic vaccination of Pasteur is perhaps the most amazing therapeutical triumph of our time.

And so each day brings with it some progress, some attenuation or modification of our prognosis criteria, some new methods of fighting disease. Armed as we are with our modern methods, having at our command mercury and arsenic in extremely active forms, do we not treat syphilis with much greater chances of success than formerly? It is not my intention to dwell on this point, but I should like to recall two other quite recent and typical instances.

Consider one of the hitherto incurable forms of trypanosomiasis—*sleeping sickness*. Thornton, and later Nicol and Mesnil, demonstrated experimentally the value of atoxyl in animal trypanosomiasis. Ayres Kopke, of Lisbon, applied for the first time the treatment to the human being, and since then results have been constantly improving. At the Pasteur Hospital in Paris Dr. Louis Martin has treated and followed in the last few years 40 cases of sleeping sickness, and he has kindly supplied me with his statistics. Of the first 20 cases, 11 died; of the next 10, 4 died; of the last 10 cases none died, and yet two patients of the last series were treated more than three years after the onset of the malady. Those gratifying results are due to the improvement in the method of treatment; for large doses, separated by intervals of ten days, Louis Martin has gradually substituted smaller doses repeated more often, and success has been more complete and more lasting. We can now talk of cure in a disease the recognition of which a few years back was equivalent to a death sentence.

Let us now take another instance afforded by *dysentery*. We know that in this disease identical symptoms may be produced through different etiological agencies, and we recognize two essential forms of dysentery, one due to bacillary, the other to amoebic infection. Therapeutical advance has not been long in confirming this distinction, and to two specific infections we now oppose two specific treatments. Bacillary dysentery is almost immediately arrested and cured by specific serum-therapy as established by Shiga, Kruse, Todd, Rosenthal, Vaillard and Dopter—to mention only the early workers in the field. As for amoebic dysentery, it now possesses also its specific treatment, which, although quite recent, has already proved its high value. This new treatment we owe to a British physician, Leonard Rogers, of Calcutta. For the last twelve years Rogers has devoted himself to the study of ipecacuanha medication in amoebic dysentery, and to the demonstration of its preventive action in regard to

liver abscess. Later, following Vedder's experiments, for ipecacuanha itself he substituted one of its alkaloids, emetin (or rather emetin hydrochloride), and he achieved the greatest success in curing quickly and entirely the intestinal and hepatic forms of amoebic dysentery. Whereas in dysenteries of equal gravity the death-rate for the cases treated with powdered ipecacuanha was 34.6 per 1,000, with emetin it is reduced to 8 per 1,000. With ipecacuanha the average duration of the treatment was 16.4 days, with emetin it has dropped to 7.2 days. As for dysenteric abscess of the liver treated by emetin injections, both hypodermically and in the abscess cavity, results have been no less favourable, and a cure is effected with astonishing ease and swiftness. The numerous cases reported by Rogers, those observed since in the Philippines and in Paris, can leave no doubt about the fact that, thanks to Rogers, a new specific therapy is born. It is one of the most active known, and such an acquisition is an inestimable benefit, a splendid therapeutical triumph. Here, then, is another disease and a grave one, the prognosis of which has been entirely modified in a remarkably short time.

If from infections we pass to the other groups of disease progress seems less brilliant, and the future possibilities appear to be more limited. The study of the disturbances of nutritional metabolism brings us face to face with causes more obscure, that act more slowly, and that are less favourable to therapeutic intervention. And yet, here again, our modern conquests are innumerable. Of these, we may mention organotherapy, dietetic treatment, and physical therapeutics. Everywhere disease is falling back before the ceaseless efforts of therapeutics and hygiene; everywhere prognosis is undergoing an evolution and holding out fresh hopes.

The Limitations of Medical Prognosis.

The foregoing consideration of a few of the general aspects of that great subject—medical prognosis—would appear to lead us to a very hopeful conclusion. Yet to this, as to all branches of human knowledge, there are limitations that we must not lose sight of, and that are calculated to humble, if needs be, our medical pride and to bring it down to a suitable degree of modesty.

What, then, are the limitations of medical prognosis? An essential distinction must here be made between *theoretical* and *clinical* prognosis. Theoretically almost everything is known to us. In a given disease we can enumerate and describe, without serious risk of omission or error, most of the complications or contingencies that may modify its course. But all that is *book prognosis*, far removed—unfortunately—from the living and individual prognosis, which relates not to a disease but to a patient. How many are the unknown quantities in medical practice, and how many the surprises! How little does it avail to know all the possible complications of typhoid fever if at the bedside we cannot foresee the intestinal haemorrhage or perforation which, perhaps in a few hours, may endanger the enteric patient's life. Again, for the newly infected syphilitic, for the gouty subject, for the epileptic at his first attack, for countless other sick patients of all kinds, how many uncertainties for the future! When a morbid condition begins we know theoretically the various paths it *may* follow; but which one *will* it follow? That is the real prognostic problem, the solution of which too often eludes our grasp. Doubtless the knowledge of the inherited soil and of previous disturbances may sometimes help us; but we are ignorant of the conditions which determine the localization of septicaemic or toxaemic infections. No one can predict at the onset of pneumonia the pneumococcal endocarditis or meningitis that will cause death. Once the metastasis is established, we cannot always appreciate the degree or the evolution of the anatomical lesion. We cannot tell whether, in an enteric case, intestinal ulceration is growing deeper, thus threatening to cause perforation. Again, in a patient with mitral stenosis, we cannot foresee whether haemoptysis, infarction, or cerebral embolism is going to occur. And so, even in those diseases with which we are most thoroughly acquainted prognosis remains uncertain. It is strong in theory but faltering in practice.

To all those reasons for uncertainty and prudent reserve I must add one of major importance—I mean the reaction of the nervous system. I forget what statesman once said that in politics one must always reckon with the "imponderables"; surely in medical practice this remark is no less true. The nerve cell may always add its perturbing influence to all morbid processes, whether in the sense of inhibition or of stimulation; and we cannot calculate or master at will nervous reaction, either in the sphere of motor or sensitive manifestations, or of psychical phenomena, or of visceral pain. We try to redress or direct it, but it may be impossible for us to foresee its gravity or duration.

Finally, and dominating the whole question of prognosis, there remains for us to gauge the possibilities of the organism that has fallen a prey to sickness. Shall we find in it the resources necessary for overpowering disease? How much can it stand and how much can we expect of it? That is the great problem which commands and includes all the others. Are we always able to solve it? I fear not.

CONCLUSION.

I must now conclude, and I must ask you to excuse the shortcomings of what has been, I am afraid, a very lengthy discourse.

Medical prognosis is, as it were, the corollary and the practical application of diagnosis; it borrows its methods, it follows its progress. In the course of its modern evolution it has taken its share of all the advances of scientific medicine; it has not ceased to walk in the paths of clinical analysis and of experimental pathogenesis; its aim has been raised, its scope extended. It appears as the synthesis of medical criteria; it precedes, checks, and justifies treatment and prophylaxis. If we consider the constant advances of medical prognosis and the many opportunities it affords us of ascertaining the lessened gravity of disease we can better appreciate the progress already achieved, and our efforts will thus meet with their greatest reward and incentive.

Uncertainty and disappointment must necessarily be often our lot; but since the science of prognosis is one of the loftiest summits of medicine, we must, in our ceaseless advance, ever strive to behold its crowning height. Even if it remains distant and lost in the clouds, we must never despair of lessening the intervening distance. Such an ambition is a duty, and it will ever be the best stimulant to medical endeavour.

Address in Surgery,

ON

REALINEMENTS IN GREATER MEDICINE: THEIR EFFECT UPON SURGERY AND THE INFLUENCE OF SURGERY UPON THEM.

DELIVERED BEFORE THE SEVENTEENTH INTERNATIONAL CONGRESS OF MEDICINE.

BY HARVEY CUSHING, M.D.,

PROFESSOR OF SURGERY, HARVARD UNIVERSITY.

MR. PRESIDENT, LADIES, AND GENTLEMEN,—Thirty-two years have elapsed—a full generation—since this Congress, under the distinguished leadership of Sir James Paget, last gathered in London. Among the participants on that occasion were five of the immortals in the history of medical sciences: Huxley—naval surgeon, zoologist, palaeontologist, educator, philosopher, public servant; Virchow—pathologist, anthropologist, archaeologist, statesman and sanitarian; Pasteur, the chemist; Lister, the surgeon; and Koch, the bacteriologist—among the foremost contributors of all time to the welfare of their kind. On the foundations which these men laid—a new conception of biology and man's place in Nature; the doctrine of cellular pathology; fermentation and immunity; wound healing without suppuration; bacterial diseases—a transformed medical edifice has been erected. Methods of investigation, the direct outcome of those which they evolved, we still employ; weapons which they devised are still, and always will be, effective, not only in a hand-to-

hand conflict with individual examples of the many diseases to which man and the animals needful to his existence are exposed, but, better still, in their prevention.

A few years before that meeting the profession of medicine, and particularly those concerned with its basic science, physiology, had been called upon in this city to defend themselves against the public charge of cruelty in their pursuit of knowledge. There had been no striking practical demonstration of the value of the common weal of animal experimentation such as an enlightened public demanded—such, indeed, as an unenlightened profession expected. The defence was based chiefly on the need, even at the cost of animal life, of increased knowledge concerning the functions of the human; but despite the warnings and protests of Huxley and a few others, the restrictive legislation of which you know was passed. Since then in the British Isles, and consequently in other English-speaking countries, medicine has been placed in the absurd position of defending the character of the labours necessary for its advancement. But all this is changing, and, indeed, began to change soon after that memorable Congress of 1881. Virchow, though his great contributions had come through mortisection studies rather than through observations on the living, gave an elaborate historical statement of the value of experimentation to general pathology. Pasteur at one of the sessions presented the results of his work on vaccination against chicken cholera and anthrax; at another Koch gave demonstrations of his newer bacteriological technique. In the Surgical Section the question of chief moment concerned primary wound healing, and in the emphatic discussions which followed, Lister, who had perforce been required to conduct some of his investigations in France, described his experiments demonstrating the bactericidal properties of blood serum. Between the lines of the printed reports one can easily perceive the coming transformation of antiseptic into aseptic surgery.

The seed of knowledge often finds a better soil when blown or carried to a distance, and in this instance it was across the Channel, where no discouraging blight was put upon the sort of research that is as necessary for the furtherance of surgery as for that of any other subdivision of greater medicine. For it was on the Continent that the principles established by Lister took firm root, and, particularly in Germany, were so ardently cultivated through experimentation and practice that modern surgery bears a more vigorous Teutonic than Gallic or Anglican graft. And is it not due solely to this legislative restraint upon the freedom of investigation that in these thirty years this country, which has continued to produce the greatest of names in the experimental sciences free from statutory restriction, has given us few instead of many notable successors to Hunter and Cheselden, to Cooper and Pott and Brodie, to Bell and Paget and Lister, who contributed to the science no less than to the craft of surgery? It would seem, indeed, that the restrictions placed upon animal experimentation have deterred the physician and surgeon from productive laboratory investigation far less than the physiologist, whose inclinations towards research the statutes of 1876 were expressly designed to hold in check; for Great Britain's representatives of pure physiology and experimental neurology, despite the hampered conditions under which they work, stand out as the chief contributors of the generation to British medicine, though the public cannot appreciate, nor the profession for the moment fully understand, the significance of their labours.

The spirit of investigation—all too rare—should be generously subsidized rather than taxed, encouraged rather than hindered. The outcome of the experiments of one participant in that Congress of 1881 is said to have saved enough for France to enable her to pay the heavy indemnity which the outcome of a war had imposed upon her. Nature is loth to give up her secrets; discoveries do not come by chance; they are made by those only who are industriously prepared to observe them, and the inquisitorial methods of those who seek the light through experimentation, misjudged as cruel, are necessarily stern and persistent, whether the investigator deals with inanimate objects or with animate beings. Possibly Pasteur's greatest triumph lay in a discovery in crystallography, but the same method of work was pursued in his studies of fermentation which inaugurated a new era in the brewing and wine-making industries; in the saving of the silkworm from a destructive parasite, of poultry from cholera, of flocks from anthrax, and in the elaboration of an effective barrier against the most frightful of deaths—that from hydrophobia. From crystals under the microscope, to yeasts, to the silkworm, to chickens and sheep, to man—and when his studies reached man, who was henceforth to be saved from the poisonous bite of his friend and ally the dog, Pasteur was accused of cruelty to animals. And the name of this simple and loving man, acknowledged the greatest of Frenchmen, but whom France alone cannot claim, is met with hisses when mentioned on certain platforms before gatherings of presumably intelligent people!

This Congress meets again in London, under circumstances similar to those of a generation ago. Again a legislative inquiry has just been forced upon British medicine by those who would abolish experimentation upon animals. But how different the testimony! It bared to the public gaze a science of medicine which in thirty years had become transformed throughout the world as a result of the very activities the Commissioners were called to investigate. Medicine no longer, even as a practising profession, is looked upon as uncommunicative, consulting in the back room as though it had something to conceal from patient or family, for in the individual case the family, and in the general case the public, are not only awakened, but are sufficiently interested and informed to come into an open consultation and to share in the struggle against disease. Great funds are devoted to the purpose; great corporations are held responsible for the health of their people; formerly uninhabitable zones of the globe are being rid of their plagues; governments, civic, state, and national, not only employ the weapons of attack and defence forged in laboratories whose methods were in question a generation ago, but expect their medical officers to make progressive contributions by further researches. All these great movements, of which Huxley and Virchow and Pasteur must have had some foresight, are but expressions of the new alinements taking place in the profession of medicine—alinements which affect the surgeon no less than the physician.

It has been a seeming paradox that the medical profession has so consistently endeavoured to make of the world a place where there is a constantly lessening need for the medical man. He is, indeed, already feeling the effect of these efforts, and as he becomes more and more a servant of the public health, and less and less a prescriber for individual ills, he philosophically accepts and humanely welcomes this outcome of medical discoveries which the experimental method has already given and will increasingly continue to give. Disorders which gave bread-and-butter to his predecessors are disappearing, as smallpox disappeared after Jenner. One injection robs diphtheria of its terrors; another, meningitis. Typhoid fever, which once replenished the doctor's autumnal pocket-book, is now looked upon as a civic disgrace, and where it exists, or is likely to break out, protective vaccination is performed against it. Tuberculosis is everywhere fast coming under State care, and the widespread campaign against the disease, in which those outside the profession are taking no insignificant part, is gradually lessening its ravages. The health of children attending the public schools is supervised by appointed officers; district nurses and the social service worker visit the homes of the sick and assume duties which the hospital physician long neglected; a privately endowed commission takes steps to eradicate hook-worm infection from a whole zone of the globe; an organized Red Cross Society, with Government affiliation, steps in in great emergencies; governments see fit to pass Insurance Acts which make public officials of the profession at one sweep. Dr. Pound of Cure Lane is being superseded by his young disciple, Dr. Ounce of Prevention Street.

In matters of health the people as a whole have been largely permitted to shift for themselves, and when they have forgotten how large a percentage of the faces of the eighteenth century and before were pock-marked, many of them wish again to exercise their individual discretion regarding vaccination. "Where there is no vision the people perish." Governments, though interested in the welfare of the domesticated animals, are too often

indifferent to the public health, and only in the face of emergencies, the greatest of which continues to be warfare, are they stirred to action, since freedom from disease is as essential as food and ammunition in the prosecution of a successful campaign. Hence have arisen the most striking examples of the effectiveness of preventive vaccination, at first against small-pox and latterly against typhoid.

The effect of the present realinements of medicine of which I speak is particularly apparent in the case of the military surgeons, for the Parés, the Wisemans, and the Larreys, the Pirogoffs, the Dupuytrens, and the Langenbecks of to-day are occupied with preventive inoculation, with the screening of the sick, the protection of water sources; more concerned with the first aid package than with the extraction of bullets; more often called upon to use the microscope than the scalpel and ligature. Little wonder that from men of this type great contributions have come. It is a far cry from Guthrie's amputation through the hip-joint at Waterloo to Laveran and the discovery of the malarial plasmodium, or to Walter Reed and the mosquito and yellow fever.

In the search for biological truths the God-given privilege of becoming obvious benefactors to their species comes to but few men. No one of the countless inquisitors of Nature knows whether the mantle of recognition will fall upon him—or, for the matter of that, especially cares, provided he be given the personal satisfaction of having taken a step forward in knowledge, no matter how trifling at the moment that step may appear to be.

To whom is chiefly due the expectancy of recovery for the consumptive? Is it to Leuwenhoek and the microscope; to the father of Lister and to Abbe, who perfected its lenses; to Réné Laënnec and his stethoscope; to Sir William Perkin, whose experiments with the coal-tar by-products furnished the necessary colour reagents; to Villemin, who demonstrated the communicability of the disease; to Koch, whose genius made possible the recognition and cultivation of the organism; or to Ernst von Leyden's propaganda in Germany and the United States; to Trudeau, himself a victim of the disease, through whose precepts and example tuberculosis has been moved into the open, where it is being effectively attacked in a campaign of education shared by laymen, Legislature and physician alike? Unquestionably, through experimentation on animals the most important step in this progress was made—the discovery of the *Bacillus tuberculosis* and its identification as the causal agent not only in pulmonary consumption but in the many "strumous" and "scrofulous" disorders which puzzled our forebears.

Where will lie the chief credit for the approaching victory over the great social scourge which since its outbreak in Columbian times has undermined the vigour of the race? Will it be with those earlier men who gave us the tools of research—the microscope, the culture media, and the colouring dyes; with Schaudinn, who discovered the spirochaete; with Wassermann and the possibility of a chemical diagnosis; with Metchnikoff, who successfully transferred syphilis to the ape; or with Ehrlich, who, by his original methods, has had the triumph of synthetizing a drug possessing a special affinity for the infecting organism but leaving uninjured the tissues of the infected host? There has been nothing heretofore comparable to this relentless, persistent, certain elaboration of a chemical compound which at a single dose may destroy within the living tissues the organism of a dread disease. Before it all past discoveries of therapeutic agents must make obeisance—even Jenner and vaccinia, Pasteur and the attenuated virus, Kitasato, Behring and the elaboration of the antitoxins.

What would the opponents of animal experimentation of 1876 have thought could this have been foreseen—this which is only the beginning, with pneumonia and cancer still to be overcome? That the means do not justify the end? That it is unfair to the lower animals, some species of which with unquestioned cruelty man sacrifices for adornment, for sport, for covering, for food; some of which he deliberately mutilates in the process of domestication or in preparation for his table; some of which, like the infected rats and squirrels of plague-ridden districts, he must attempt to exterminate for his self-protection? But in the search for knowledge the investigator does not exempt himself as a subject of so-called vivisection when lower animals do not suffice for the purpose;* nor will he ever hesitate even to endanger his life, whatever may be the ethics of the question, if thereby information is likely to be gained concerning some disease fatal to his kind.

To whom is due the approaching transformation of the tropics into a possible habitat for civilized man? Again, a series of investigators on investigators' shoulders, until Theobald Smith, in the case of the tick-infected cattle decimated by bovine malaria (Texas fever), in 1893, showed for the first time that a parasite might be an essential intermediary host in the transfer of a disease from animal to animal. Promptly all blood-sucking parasites of man became objects of suspicion, and ere long convictions followed—first in the case of filaria by Manson, then Ross's demonstration that the mosquito is also an essential link in the cycle of "million murdering" malaria†—a discovery which was made possible through his studies of infected birds. But when it became necessary to establish unequivocal proof in the case of man, the younger Manson, and Warren, of the London School of Tropical Medicine, did not hesitate to submit themselves to the bite of infected mosquitos sent for the purpose to England from the Roman Campagna. It is hardly possible for one unfamiliar with the experimental method and its necessary tedious controls, to conceive of the patient, unflagging, time-consuming labours on the part of many investigators the world over, often conducted in most unhealthy districts and in the very shadow of death, which step by step were required to lead to this final demonstration—labours which in review seem almost beyond the possibility of accomplishment. The discovery of the malarial plasmodium of the blood, the determination of its several varieties, the study of the sexual cycle of its development, the observation of the changes in the stomach wall of the mosquito and the final lodgement of the sporozoites in the glands of the proboscis, the recognition of the particular species among the many genera of mosquitos concerned, the establishment of the fact that the female alone is the active agent, the finding of the length of time necessary for infectivity—such step, whether made by Frenchman, by Italian, by Canadian, by Englishman, or by German, was a triumph of the spirit of research, and no great objection is raised if, in the process, the mosquito, bird, and man are the subjects of experimentation.

Soon the participation of another species of mosquito in the transmission of a still more dreaded disease was demonstrated in Cuba by the United States Yellow Fever Commission, at which time Carroll, Lazear, and some brave volunteers from the ranks permitted themselves to be bitten by infected parasites—the lamented Lazear dying a victim of the disease he had invited. The imagination of the public is only beginning to respond to these acts of heroism constantly being performed by investigators the world over—performed for humanity's sake, and surely no less, but even more heroic than the quickly applauded dangers risked in warfare for the sake of country alone. Far better could our proof of the transfer of yellow fever through the bite of the *Stegomyia* have come through the sacrifice of lower animals had animals susceptible to the disease been available for the purpose, but to the members of that Commission there seemed no alternative to experimentation upon human volunteers. And what have been the results? Pestilential districts become habitable; commerce with tropical ports, once annually quarantined because of the recurrence of a dread scourge, continues the year round; across an isthmus formerly plague-ridden two oceans are being joined, where under a

* Henry Head's important studies on the sensory disturbances produced by a purposeful division of a nerve in his own arm may be given as an example.

† These significant lines, too little known, were written by Ronald Ross on the eve of the discovery:

This day relenting God
Hath placed within my hand
A wondrous thing; and God
Be praised. At His command,

Seeking His secret deeds,
With tears and toiling breath,
I find thy cunning seeds,
O million-murdering Death.

I know this little thing
A myriad men will save.
O Death, where is thy sting?
Thy victory, O Grave?

former régime shovels alone, without drainage and screens, proved utterly unavailing.

And after the cattle-tick and the mosquito, other biting parasites—the flea and the bed-bug, the fly and the louse—have risen in dignity from a disgrace to a menace.* Immediately the patient studies of the insect world by the entomologist, disturbed from his quiet seclusion as a systematist into active participation in medical problems, become of the greatest practical value, and under the wing of preventive medicine his speciality, like that of the helminthologist and protozoologist, becomes as essential to the medical curriculum as was that of the botanist of a century ago. These are astonishing changes to have been brought about by the experiments of one modern scientist who had the training, the imagination, and the patience to investigate the ticks of cattle afflicted with a destructive plague, and after four years of laborious study to identify them as essential agents of the disease.

Herein, it seems to me, lies the weakest point in the opposition to experimentation on the basis of cruelty—namely, that the animals whose preservation is desirable benefit from these investigations as greatly as man. There is no more notable example of this than in the case of man's companion—the dog. Through the deserved attachment which has grown out of this companionship a sentiment has arisen which would exempt the canine species from experimentation. But had such a law been put on the statutes, Copeman's discovery of the bacterial cause of distemper and of a successful method of inoculation against this most fatal and distressing canine disease would have been impossible; and the same is true of the fatal malignant jaundice—a parasitic blood disease conveyed by the bite of the dog tick, which is so prevalent in some parts of the world as to make the rearing of dogs impossible, and for which Nuttall has found an effective remedy and means of prevention. What a credit to the societies for animal welfare could such discoveries have come through their own efforts rather than through the efforts of those whose methods of research they are prone to question!

Large sums of money have been wisely devoted to the prevention of cruelty to animals, and much good has been done in the past, but by a strange process of evolution most of those now entrusted with these funds, instead of grasping the opportunity to advance knowledge of the diseases of animals, have devoted their energies to opposing such advance as may be undertaken for the sake of man at some expense to animal life. The future offers a great opportunity for these societies, whose capital is now largely expended, on the one hand, in the wholesale sacrifice of stray and diseased animals, and on the other, in destructive criticism of the methods of those they call vivisectionists; for by constructive investigation and by the employment of the same methods which have been elaborated by those whose primary object is the study of the diseases of man, they may become as great benefactors to animals, and incidentally to man, as the medical scientists have been to man and incidentally to animals. There could be no better outlet for the present wasteful methods of many of these organizations than the establishment of veterinary hospitals in which modern methods of treating disease could be employed, further investigations made, and students of veterinary taught—the three great functions of any hospital; and there is promise in some communities that this wise step may be taken.

Though less true of many European countries, where veterinary institutes which are doing admirable progressive work are under Government control in close association with universities, in the United States, and I think the same is true in a measure of Great Britain, most veterinarians have profited not at all by the advance in general medical knowledge of the past generation. This applies particularly to veterinary surgeons who still trust, in the operations which they venture to undertake, to the rough and casual methods of old, with scant if any pretence to the modern refinements of skilful anaesthetization and septic surgical technique. Little wonder that people who are aware of this difference prefer to have their pets, when in need of surgical care, operated upon in an experimental laboratory rather than in many of the established veterinary hospitals. Some years ago, in the surgical laboratory at Johns Hopkins, this work grew to such proportions that a course covering the technique of operative procedures was offered to a group of veterinarians, who there for the first time learnt methods which would enable them to save valuable animal lives by procedures which they had considered impossible, and which for the general run of veterinary surgeons had been impossible.†

When himself a victim of an operable malady man voluntarily submits to a surgical operation, which is nothing other than vivisection, aware that the momentary risk and temporary discomforts—happily far less than they were of old, despite the increasing magnitude of the procedures which are undertaken—are but a small payment for the possible and probable ultimate good. And most experimental procedures in the laboratory to-day are conducted on the same principles and with the same precautions that are observed in the hospital operating-room, and the rewards of experimentation, largely for these reasons, are greater than ever before. This is one of the great contributions which the surgery of Lister has made to the advancement of the medical sciences—a contribution as great as that represented by the immediate benefit to the stricken patient no longer liable to the dangers of wound infection. It does not seem to be realized by the opponents of such forms of research as entail experimentation upon animals how few individuals undertake it, for the work requires elaborate preparation, expensive and delicate apparatus, is time-consuming and fraught with baffling disappointments. Ehrlich experimented with 605 synthetically prepared chemical compounds before salvarsan was attained. Painful experiments were necessary before anaesthesia, just as painful surgery was necessary; and the extraordinary thing is that the physiologists of the days before surgical anaesthesia and reactionless wound healing ever learnt from animals what they did of the functions of the human body, for the solution of the problems of digestion, circulation, secretion, and nervous action cannot satisfactorily be undertaken if the subject be emotionally disturbed or suffer pain or be not gently and properly cared for. Whatever the conditions may have been in the past, the opponent of research need have no apprehension to-day on the score of the elicitation of pain. And in this connexion is it not extraordinary to recall now the protests once raised by poets, divines, and even physicians themselves, against the banishment of pain by ether and chloroform—for had not man been fashioned to suffer?

Experimental therapeutics will in time doubtless give us the ideal anaesthetic in the form of a drug possibly allied to chloretone or scopolamin, a single injection of which will induce a prolonged insensitive sleep, perchance of long enough duration for primary wound healing to occur. Then will the surgeon's sense of responsibility, whether in laboratory or clinic, be greatly lightened, for undoubtedly to-day inhalation anaesthesia itself gives him his chief anxiety, and his patients, whether animal or man, their chief discomforts. Still, in spite of its present defects, anaesthesia—and it is a pity that there is no one man to whom we can unqualifiedly attribute its discovery—shares with Lister the credit of having made of surgery the most important agent which we possess for the cure of disease. Its principles are so definite, its technique so easily acquired, its performances in the long run so safe, that as a therapeutic measure human vivisection—to use this cruel word in a sacred sense—has almost wholly lost its terrors. The triumphs of surgery stand beside those of hygiene and preventive medicine as the notable medical achievements of these thirty years.

* Parasitism comes to have a far broader significance in relation to medicine than is covered by bacteriology alone, and from its wide-spread existence in Nature, among plants as well as animals, and from the fact that "every parasite has near relatives that do not possess the parasitic habit," it may be assumed that these habits are acquired, and that consequently some diseases may be of recent occurrence and that still others may arise anew. Metchnikoff has even suggested that among parasites we may look for the latest products of evolution It is a far cry in the history of parasitism from the first given example—the mistletoe by Pliny—to a haematozoan, one cycle of whose development must take place in the body of a blood-sucking intermediary host.

† It was during this laboratory course that a woman prominent in the local antivivisection circle, who owned a number of cherished and interesting dogs, brought one of them, a valuable bull-terrier, to be operated upon for an extreme vaginal prolapse—one of the complications of whelping incidental to these highly-bred pets. The owner was so gratified by the result that the animal and one of its mates were subsequently brought to the laboratory to have their ears pointed and tails docked, a request which was, of course, refused. Such are the inconsistencies of mankind!

Of the new alinements which have been the outcome of this modern surgery I particularly wish to speak. Is it not a striking fact that the health officers comprising the medical corps of our armies and navies—men who have a medical degree, and who may be called upon in an emergency to practise any branch of greater medicine—are called surgeons? I have indicated in some of the preceding paragraphs how far their activities may be removed from handicraft, supposed to be the chief business of surgeons. Though formerly this may have been their sole occupation, they are coming to use more the armament of the scientific physician and public health officer.* Thus, the army medical officer, unhampered by tradition, more nearly fulfils the office of the Greek physician, who, as Sir Clifford Allbutt has so well said, had no more scruple in using his hands in the service of his brains than had Phidias or Archimedes; whereas his brother in civil life still adheres to the traditions of the times when the manual and debasing craft of surgery was cast off from medicine.

Surgery by force of circumstances groped its way alone through the dark centuries—a craft largely devoted to the repair of wounds and injuries inflicted in warfare. But its principles were sound, its growth steady—until now, and particularly in the past generation, it has rapidly developed into the most generally useful therapeutic measure which the physician has at his command. Its principles, moreover, are as profitably employed by the investigator in his laboratory as by the clinician in the case of an individual the victim of disease. It has served to break down medical sects and systems, such as Hahnemannism, for what principle of homœopathy justifies the use of scalpel and forceps! Indeed, surgery has been one of the great factors in the present realignments of medicine, for from Lister and Pasteur as their fountain-head the great streams of progress have flowed, in the case of the individual, into the art of surgery, and in the case of the community, into prophylactic medicine. Even the physician, who for so long held himself aloof from anything savouring of handicraft, returns to it with that useful instrument, the hollow needle; and paracentesis, lumbar puncture, and the extraction of blood for diagnostic, or the administration of drugs and serums for therapeutic, purposes by a minor surgical act are an acknowledged part of his therapeutic resources. By a strange transformation, too, he has become the phlebotomist, and the venesections and cuppings, formerly the overworked province of the barber-surgeon, are largely practised by him to-day.

Billroth said some thirty years ago, "Die innere Medicin müsse mehr chirurgisch werden," and this seems to be what is taking place. Before Billroth's time it was largely internal medicine *versus* external surgery, for operative measures were necessarily confined to the exposed parts of the body; the visceral surgery of to-day—the larger part of the present surgeon's work, in the inauguration of which Billroth himself played no inconspicuous part—was then inconceivable. We still retain many of the traditions of those earlier days, days when a pure craftsman, steeled to act in the face of unanaesthetized suffering, amputated, removed surface tumours, ligated vessels, and cut for stone, the fistula, and a few other ills with an unerring hand and unbelievable speed. The high road to surgery was through the anatomical dissecting-room, and in these surroundings the operations of surgery were then, and are still, largely taught, with the result that the rule-of-thumb operations of one generation are handed on to the next, who will never use them, owing to the extraordinary progress ever making in these measures due to methods of asepsis and the increasing knowledge of surgical possibilities. To-day an individual of wholly different temper from the surgeon of old ventures to do operative work, and the essentials for his training are of an entirely different order. Descriptive anatomy, useful as it may be to him, is no longer a prime requisite in the terms of the past generation, but his knowledge of visceral physiology and pathology must be broad, his observations of asepsis unimpeachable, his skill in haemostasis and handling of the various tissues delicate and painstaking. As a training ground the anatomical dissecting-room fast gives way to the experimental laboratory.

An entire change in the character of surgical workmanship has been the striking transformation in the surgery of the past decade or two. The accurate and detailed methods, in the use of which Kocher and Halsted were for so long the notable examples, have spread into all clinics—at least into those clinics where you or I would wish to entrust ourselves for an operation. Observers no longer expect to be thrilled in an operating room; the spectacular public performance of the past, no longer condoned, are replaced by the quiet, rather tedious procedures which few beyond the operator, his assistants, and the immediate bystander can profitably see. The patient on the table, like the passenger in a car, runs greater risks if he have a loquacious driver, or one who takes close corners, exceeds the speed limit, or rides to applause.

And in all of this new visceral surgery it seems to me that the physician has merely come to do his own surgery, that internal medicine is merely becoming surgicalized, much as military surgery has become largely medicalized. In the breaking up of greater medicine into its clinical specialities, the primary cleavage gave us the physician and the surgeon, with medicinal *versus* manipulative forms of treatment as their essential distinction. Chiefly on anatomical lines each of these major subjects has broken up into a second or even a third order; but in the case of these further subdivisions it is to be noted that there is an inevitable tendency for operative therapy to become attached thereto, so that we have the ophthalmic or aural or laryngological surgeon, the gynaecological, orthopaedic, genito-urinary, or neurological surgeon, according to the direction whither opportunity or training or inclination may have led. Even the obstetrician—the half-brother of the physician and surgeon—reaches out for the operative side of the diseases of women, with the complete *Frauenklinik* in mind.

And what is happening in these specialities is an indication of the tendency in the two major branches; for internal medicine and surgery, as the treatment of disease grows less empirical, unquestionably tend to converge. Having the same preliminary training, possessing the same diplomas, the graduates of our schools gravitate toward surgery if handicraft appeals, otherwise toward medicine, but in habit of thought and general attitude toward disease there is little difference to-day between the higher order of physician and surgeon. Though possessing a strong distaste for the act of operating itself, many physicians have admirable surgical judgement and are perfectly capable of the surgeon's craft, just as a well-schooled surgeon should be capable of practising the physician's art. The basis of their training has been the same, and their divergence to-day comes about only through occupational likes or dislikes. Both have the same familiarity with the more common disorder—those of the abdominal cavity for example—and indeed the surgeon, provided he devotes the time he should to the preliminary study of his case, is apt to hold the advantage over his medical colleague in this regard, unless the latter industriously follows his patient to the operating table, where, as is known, he can often learn from living pathology much that was impossible from the pathology of the *post-mortem* room.

A clinic, let us say on aneurysm, is given in very much the same vein by both physician and surgeon, and their common road forks only at the post of treatment, where down one (and the longer) path beckon Valsalva, Tuffnell, and Balfour, to rest, a low diet, and potassium iodide, and down the other (and shorter) Hunter, Corradi, and Matas, to some method requiring exposure of the lesion through an incision. The internist has learnt that effective operative work cannot be done well for him by one who merely represents his hands, and he would not venture to refer his patient with obstructive jaundice or haematuria or pyloric stenosis to a mere operator who did not have the same knowledge of and the same attitude toward the pathological lesion of liver or kidney or stomach that he himself has. This, in other words, is equivalent to the physician doing his own surgery, for I think it is stupid to say, as has been said, that the surgeon has taken the appendix and gall bladder, and now the stomach, thyroid, and brain, and threatens to take the lungs and cardio-vascular system and so on, away from the physician. It means merely that as the physician

* One should, of course, not forget in this connexion Sir John Pringle, the originator of the Red Cross idea, who may be regarded as the founder of military medicine, and whose volume, *Observations on the Diseases of the Army*, London, 1712, is one of the medical classics.

becomes more and more a craftsman and user of instruments of precision, internal medicine and surgery tend to draw together and to overlap, as they have not done since the thirteenth century, when the physician-priests were debarred by ordinance from undertaking any operation involving the shedding of blood.*

In no subdivision of medicine has this been more apparent than in the difficult subject of neurology—a subject which has been conspicuously poor in therapeutic resources. Time was—and not long ago—when under the direction of the neurological diagnostician who mapped out the field of operation on the scalp, blundering attempts were made to do his cranial surgery for him. The combination was an utter failure, for the same reason that similar combinations had always proved failures before. Not until the operative possibilities of neurology were taken up by those possessing some preliminary knowledge of and interest in the nervous system and its diseases, as was notably the case with Sir Victor Horsley—in other words, not until certain neurologists began to do their own surgery—did the recent rapid strides in this direction come about. To-day a school of operating neurologists is being trained to continue this work, for as promising a future lies before intracranial as lay before abdominal surgery; but the error must not be made of permitting surgical specialists to enter this or any other restrictive field of operative endeavour without a broad preliminary training in medicine and general surgery. This mistaken course, critics say, has been pursued in some of the established surgical specialities. That they may lose sight of the patient in their expert knowledge of the disorders of a certain portion of his body in a natural tendency of those who particularize in their work at too early a period. This undesirable attitude can be forestalled only by a long apprenticeship in general medicine and surgery before specialization is undertaken, and by subsequent contact and free exchange of ideas with those who continue in more general work. Indeed, the existence of the operating specialist as contrasted with the general surgeon is justified only if the former take advantage of his opportunities to contribute to the knowledge of the disorders he specially treats. When progress ceases to be made, through the incentive studies which the smaller field of work permits, there is every reason why the vagrant speciality should be called back under the wing of its parent, general surgery, from whom in no circumstances should it ever be permitted to wander too far.

The surgical specialities, to change the figure, should represent merely grafts on the parent stem, for in their cultivation as separate plants they may cease to blossom and to bear fruit. Indeed, the establishment of subdepartments as offshoots of general surgery in a given hospital is justified solely by the promise of productivity of the individuals, around whom such subdepartments are permitted to grow, but with no anticipation that a successive line of equally competent individuals will be found to justify the continuance of this or that speciality in perpetuity. It has been said that "the specialist should be a trained physician, a skilled surgeon, and something more, but he is often something else—and something less." One thing which has kept the so-called general surgeon from getting a distorted image of his patient's malady—a vice of which the specialist is often accused—is his wider experience with disease affecting the body as a whole; and it would be rejuvenating to many of the surgical specialities if they could be periodically absorbed by general surgery, to be born again under the leadership of individuals who through fresh contributions could give a new impulse to a senescent subject. On this basis there are any number of fields which under cultivation could be made to yield abundant crops; for the blood vessels, joints, thoracic viscera, ductless glands, and much else are as deserving of intensive study from the operative standpoint as were the pelvic organs, the nose and throat, or the genito-urinary apparatus.

And for those who, on this basis, prove worthy of the opportunities of specialization, and for whom every possible facility, in laboratory and clinic, should be given for intensive work, the most satisfactory rewards are open. In commenting on his thyroid investigations the celebrated Pirogoff once said to Professor Kocher that "the most perfect satisfaction which one can have in medicine comes through the thorough study of one special chapter in every direction and from every point of view, clinical, histological, physiological, and pathological." No knowledge, or experience, which in fragmentary fashion may cover a multitude of ills can be comparable to this thorough familiarity with one subject from every possible aspect. Still the general surgeon is by no means exempt from the frailties of the hereditary specialist. He, no less than others, easily becomes the slave of local custom, a creature of habit, who accepts innovation with reluctance. The customs, good or bad, of a surgical department are easily handed on from chief to home officer, to clinical dresser, with little change from generation to generation. Customs which once were good may have staled, and those whose vision is limited to the walls of a single institution be unaware of it. At the beginning of the present century, twenty years after it was deemed unnecessary by its originator, the carbolic spray was actually to be seen in use at a famous hospital.

A certain loyalty to the methods of a locality, and even to those of an individual hospital, is apt to be cherished and suspicion cast upon the hearsay methods and results of other, and possibly rival, clinics. This, I am told, was formerly true of your great London hospitals no less than of others. New technical principles, unless they have been observed and their value appreciated, find their way slowly from institution to institution. Reading of methods will not suffice; the objective exchange of ideas, which can come through demonstration alone, is necessary. The rubber glove was in general use in Halsted's clinic for twenty years before it was adopted elsewhere. Those who had not visited his operating room scolded at the idea. What was to become of our prized *tactus eruditus*? But onlookers gradually became disciples, and this useful safeguard is so generally employed that the very source of the idea is forgotten.

"Surgical instinct" and the "educated touch" have been overworked shibboleths which have stood in the way of many innovations, particularly those which concerned the introduction into practice of instruments of precision. As told in rhyme by Oliver Wendell Holmes, fun was poked at Laënnec and his new-fangled toy, the stethoscope. Probably Floyer heard a protest against the "pulse watch" and Wunderlich against the thermometer; only yesterday it was raised against the instrumental measurement of blood pressure. Had not the hand been industriously trained to estimate the degree of fever by contact with the patient's brow, and the fingers the quality of the pulse at the wrist? Even the Roentgen ray brought misgivings to those skilled in the elicitation of crepitus from fractured bones.

The tendency to disparage the so-called accurate or "scientific" attitude in medicine, and to make much of the "practical" doctor or surgeon who is superior to the microscope and other laboratory accessories, is rapidly passing. It was one of Paré's canons that

> Science sans expérience
> N'apporte pas grand, assurance.

But the confidence which is bred of practice uncrossed with science is still less dependable. Abraham Flexner states that during his study of the North American medical schools he heard much talk of training the practical rather than the scientific doctor, and remarks that the chief difference between them, as far as he can see, is that the scientific doctor is less likely to lose his patient. Most progressive surgeons of late years have adopted the wise custom of frequent interinstitutional visitations, and this custom of attending the clinics and observing the methods and workmanship of others has done much to reconcile these opposed points of view.

To make this habit more effective than was possible when indulged in by an individual alone, just ten years ago a small group of surgeons in the United States formed a *Wanderbund*, which at stated intervals has since visited, in rotation, the institutions of the six or eight important medical centres represented in their organization. At those exercises no papers were read, but a concerted effort is made by the local members of the society and

* By no means should this idea be distorted into an encouragement for doctors with insufficient technical training to undertake their own operations; and I understand there is a widespread tendency in some districts for them to do this, brought about in all likelihood by the fact that with his diminishing practice many a lesser physician feels that he can no longer afford to "turn over" his operative work to another.

their colleagues to open their clinics, laboratories, and class-rooms for inspection while under full operation. Thus, as in our student exercises, the present educational tendency is less and less towards subjective and more and more towards objective methods of teaching, so the success of the organization I mention has demonstrated that the same principle is equally applicable to medical societies. Similar travelling groups have come to be established in other divisions of medicine and in more specialized branches of surgery, and I believe, too, that the idea has taken root in England and other countries. From its foundation, the object of our society, inasmuch as its members were mostly teachers and investigators as well as surgeons, was threefold—to observe the methods of instructions pursued by their colleagues in other cities, to follow at first hand the progress of their laboratory studies, and to attend their surgical procedures in the operation room. Our early peregrinations disclosed very obvious differences in surgical habits, thought, and workmanship among the various institutions represented in the society membership—differences, however, which in the course of a few years largely disappeared. Unquestionably there is now more nearly equal, and a much higher, level of workmanship throughout; and as the members of the organization in one or another are in the position to pass along the instruction which they have received, this will have not only a broadening effect on the surgery of the present, but a still more marked influence on the surgery of the next generation. Such a clinic as that of the Mayo brothers, where may be seen a composite of the best in international surgery, is a good example of the effect of sympathetic, intelligent, and systematic inspection of the work of others.

As I have said, the application of surgical principles, whether in laboratory or clinic, is constantly becoming more general. The slipper of surgery has been found to fit that Cinderella of Medicine, experimental pathology, whose coach now has devoted outriders representing all departments. Observations which, even in the hands of a Bernard or a Cohnheim, were impossible before the era of reactionless wound-healing now become possible; not only may the counterfeit of conditions of disease be produced and studied without the complicating element of sepsis, but with surgical methods the Pawlows and Carrells of the laboratory bring about altered conditions which shed new and important light on physiological processes.

All this has led to the establishment of special laboratories of surgical research, where modern operative methods are particularly applied, but as a matter of fact they are nothing more than laboratories of experimental pathology, or, better still, of *experimental medicine*, as the Institute in St. Petersburg and the Hunterian Laboratory in Baltimore are called. The establishment of similar institutions elsewhere indicates that an increasing number of surgeons to-day have instincts which lead them into the broader aspects of disease and away from the mere operative task that formerly kept them in the dissecting-room. Other than this there is no special significance in these laboratories, where investigations are undertaken which are as appropriate for anatomy, physiology, bio-chemistry, or pathology as for medicine or for surgery.

Indeed, the definite boundaries formerly separating these subdivisions of the curriculum have become so overgrown by surgical experimental pathology that it is sometimes difficult to tell when the investigations of one department are trespassing on the preserves of another, nor does it much matter if the common goal is the advancement of medical knowledge. This unquestionably is a development in the right direction, for it is a peculiarity of the medical sciences, as Huxley once remarked, that they are independent in proportion as they are imperfect. Even anatomy, long a purely descriptive science, is adopting the experimental method. At Johns Hopkins a professorship of *physiological* anatomy has recently been established, and the Carnegie Institution has founded an institute of experimental embryology and has put a great anatomist at its head. These are straws of promise for the future anatomist, and he will be brought into closer contact than before with the physiologist, the pharmacologist, and the pathologist, who themselves already touch elbows so intimately that many of the problems which engage one of them might suitably be undertaken in the laboratory of one or the other of his colleagues.

In consequence of this lessened departmental activity all react far more quickly than heretofore to a ray of light, disclosing some new aspect of disease, just as they do to some novel method of study which reopens a door long closed against profitable investigation. The glands of internal secretion and their inter-relations, brought to the fore primarily through the clinic; the principle of intravital staining, with all its promising ramifications, introduced by the experimental therapeutist; the studies of cellular physiology which refined methods of tissue staining promise to make so fruitful; and the growth of tissues *in vitro* by the experimental anatomist—these occur as immediate illustrations. Indeed, the possible prompt application by the clinician of many of the discoveries made by his colleagues in the medical sciences, as well as the fruitfulness in turn of the hospital clinic in problems suitable for the pure scientist, have served to realign them, so that in some institutions the physiologist and pharmacologist have wisely been given posts comparable to that long held by the pathologist alone. Thus, through experimental or physiological pathology—or by whatever term one may wish to designate the present rejuvenation of a method which is having such a strong influence in the unification of their labours—biologist, morbid anatomist, therapeutist, hygienist and sanitarian, physician and surgeon alike, are brought into closer co-partnership than has heretofore been thought necessary or advisable. And as the physician and surgeon develop under the influence of a closer contact with their brethren of the non-clinical medical sciences, the leaders of these two branches will of necessity come more and more to hold an academic attitude toward their posts. This inevitable tendency, so far as our hospitals and schools are concerned, will have a revolutionizing effect on clinical medicine and surgery. The change cannot be made in a moment, any more than it was possible in a moment to place anatomy and physiology and the other preclinical sciences on a full-time academic basis, but once established we would no more recede to the earlier conditions, where energies were divided between school and practice, often to the detriment of the school, than we would now in the case of the so-called scientific branches.

And this brings me to the final subject on which I wish to touch, one which of late has aroused much discussion and has been thoroughly ventilated here in London before the Commission on Medical Education—namely, the relation toward the hospital and medical school to be held by the new order of physician and surgeon and their junior associates. Herein lie problems a source of anxiety—to many—problems, however, which will not be solved by shunning them. Our great public hospitals have ceased to be grievous and infected places, and people are rapidly losing their dread of them. Meanwhile, as disease becomes better understood, the complexities of its accurate recognition and successful treatment become even greater and require the studies of an increasing number of co-workers—a situation which makes a most unsatisfactory matter of the office or home consultation. In consequence, people, in greater and greater number, desire when ill to enter into institutions for study, and this applies to the well-to-do as well as to the poor. Consider, for example, the present-day methods essential for the recognition and treatment of a single disease, which with its varied complications is possibly not only the most prevalent one the doctor encounters, but which has been regarded as the one most easily prescribed for. Indeed, so definite and so effective were his therapeutic measures supposed to be, that the shabby habit was acquired of making the administration of iodides and mercury serve as an aid to diagnosis—a habit which often led to added confusion. To-day the clinical acumen of the practitioner, experienced though he may be, has given way to a chemical test by a laboratory expert, and only when the disease is thus proved to exist is a diagnosis accepted. The discovery of the spirochaete and the study of its biological habits have taught us that in certain parts of the body, especially the central nervous system, the organism is not accessible to the former methods of treatment, or, indeed, if reached, that it may have acquired an immunity and resistance toward the very drugs supposed to destroy it.

Let us suppose that the malady has taken the form of a cerebral gumma. The patient has headaches, and there is

a suspicious clinical history. What is required? A lumbar puncture, a cytological study of the fluid, and the Wassermann test requiring one specialist; an ophthalmological and perimetric examination needing another; a neurologist certainly, for a careful study is necessary to determine, if possible, the situation of the lesion; probably, too, a roentgenologist; and in the end, perhaps, another to administer salvarsan; or, in the case of a non-absorbable fibro-syphiloma, as likely as not an operation will finally be needed. And this for what was yesterday a simple problem, easily faced by the practitioner single-handed! Thus scientifically accurate diagnostic measures and a new form of therapy requiring blood-letting and manipulative skill make a craftsman even of the syphilographer. This is a far cry from a written prescription, a bottle and spoon.

No, the practitioner cannot be chemist, neurologist, bacteriologist, ophthalmologist, radiographer, surgeon, and what not rolled into one, and do effective work. The Jonathan Hutchinsons of the profession are, alas, rare. And as the co-operation of those expert in special lines becomes more and more necessary the tendency will grow for these conjoint studies of individual cases of disease to be carried out in properly equipped hospitals, where the data essential for a diagnosis can be more quickly and effectively accumulated and the paraphernalia for treatment kept in smooth running order from constant use. This is particularly true in so far as it concerns surgery; for in proportion as this form of therapy is the more dangerous, so much the more need is there for surrounding it by every possible safeguard against misuse or accident.

The more difficult and complicated problems of disease will gravitate to large institutions where no longer "visiting" appointees, but directors of hospital units in continuous service, unhampered by an ill-adapted hospital administration, can uninterruptedly devote themselves to their work without entering into competition for practice beyond the walls of the institution. For when advantage is taken of a hospital appointment to make it a high road to practice, the visiting physician or surgeon immediately becomes a less valuable institutional servant, if for no other reason than through the dissipation of his energies. When this abuse is widely corrected the family physician of old, so rapidly passing as a type of practitioner, and than whom no more useful member of the community ever existed, may again come into his own, with an even larger and better field than before, quick to take advantage in his more difficult and serious problems of institutions where the chiefs of service are in no sense his competitors, but rather his coadjutors. Owing to the present dismemberment of medical practice into its many specialities, the public has begun to feel that there is no balm and no physician in Gilead.

Meanwhile, it will be the *energetische imperativ*, to use Ostwald's symbol, of the paid hospital incumbents to take advantage of their opportunities to observe and investigate conditions of disease for other and higher reasons than the expectation of financial returns from competitive practice. They will also instruct and be instructed by their full-time junior associates, and these in turn by the student body, without whose actual aid and stimulus a properly modelled hospital organization can hardly survive, and who in return will receive, in addition to the advantages once attached to the old apprenticeship system, the added benefit of contact with the active work of co-operating departments.

The cry has been raised that this evolution of the physician and surgeon will make teachers incompetent to instruct those who are to enter practice, but the same cry was once raised against the appointment of the full-time physiologist, anatomist, and pathologist, whose loss of contact with practical medicine, it was presupposed, would disqualify them on the same grounds. After all, is not the essential thing to inculcate in the student's mind the habit of acquiring clinical knowledge for himself? And there is no possible way of doing this except by bringing him into immediate touch with the sick-bed. This, in the terms of Huxley, makes for centrifugal education, whereas our customary methods are centripetal in direction, with the effort to drive formulas into the student's head rather than to teach him how to produce ideas of his own. In an address on this subject Henry Fairfield Osborn aptly said that "the measure of a teacher's success lies in the degree with which ideas come, not from him, but from his pupils."

These, then, are some of the transformations and realinements which are taking place in medicine, and which, directly or indirectly, have come through the great contributions made a generation ago by those with whose names this address was introduced; the public is not only awake to the great developments in medicine which animal experimentation has made possible, but ready to participate in their application for the general welfare; the physician at large, the valued family adviser, in reaching out toward the important problems of hygiene and preventive medicine, while the individual patient, as the complexities of disease unravel, needing more and more specialized and more and more surgicalized treatment, is gravitating toward the modern hospital; the departments of the preclinical medical sciences, which formerly existed in splendid isolation, find their fences down, owing to the levelling influence of experimental pathology; hospital organizations are undergoing changes which will ultimately require the full time and continuous activity of those who serve them for the benefit alike of student, of science, and of patient. The kaleidoscope of medicine is turning; these are merely some of the present rearrangements of the images as I see them—new patterns from original fragments—for "Is there anything whereof it may be said: See, this is new? It hath been already of old time, which was before us."

PELLAGRA IN GREAT BRITAIN:

NOTES OF SOME FURTHER CASES.

BY

LOUIS W. SAMBON, M.D., F.Z.S.,

LECTURER TO THE LONDON SCHOOL OF TROPICAL MEDICINE, AND PARASITOLOGIST TO THE WELLCOME RESEARCH LABORATORIES.

SINCE the publication of my third article on the occurrence of pellagra in the British Islands (JOURNAL, July 19th, 1913) several more cases have been reported to me from various parts of England and Wales. Of course, as was to be expected, all were not pellagra. Some of the "possible cases" turned out to be psoriasis, lupus erythematosus, and eczema, but by going to examine all such as presented a likely history, I have had the opportunity of seeing genuine pellagra in its most typical and severe form, and such as I have observed it in Italy, Roumania, Spain, and other countries where it has been long recognized.

One very striking case was brought to my knowledge by Dr. J. S. Stephenson, of the Prestwich County Asylum. Dr. Stephenson in writing to me on July 22nd said:

There is a case under my care here which I think is almost certainly pellagra. It is a girl nearly 17 years old who has been ill for more than two years.

Dermatitis appeared at the beginning of June this year for the first time. Its distribution—back of hands, lower part of back of forearm, creeping round the flexor aspect of wrist, and on the face, fits in exactly with the description you have given.

Mental symptoms, nervous symptoms, diarrhoea, and also tenderness along the spines of dorsal vertebrae are all present. She was born in the Ancoats district of Manchester and lived there all her life, the eldest of a family of five. According to the parents none of the other children show symptoms. They have absolutely no knowledge of maize—they say it has never been used as food by them. There is a canal within 50 yards of the house in which they have lived for fourteen years. The only time the patient has been for a holiday in the country was when she was 12 years old; then she spent a fortnight in Cheshire at a place called Mobberley.

I have made some notes of the case and observed the behaviour of the "rash" when light is excluded, etc. Should you care to hear more of this case I shall be very pleased to send further particulars. I think it is worth publishing in support of your statement that pellagra must be much more prevalent than is supposed. This case, for instance, was under observation and puzzled me completely until I read the account of the disease in the BRITISH MEDICAL JOURNAL on July 5th.

On July 25th I went to Prestwich and saw this case; it was quite typical. The following notes are by Dr. Stephenson:

She is the eldest child of a family of five; the next three are boys, aged 14, 12, and 7; the youngest is a girl, aged 4. The boy of 14 is said to be delicate; he had an abscess in his side

when 7. The others appear to be healthy; they show no sign of skin lesion at present.

The patient went to school till the age of 14; reached the seventh standard. After leaving school she worked at a tin-plate works for four months and at a warehouse for a fortnight. Then her first illness commenced; she was in bed for seven weeks. Her complaint was pain in the stomach; the doctor called it typhoid fever, but the blood reaction was negative; she had constipation, no diarrhoea. When convalescing from this attack she was taken to Crumpsall Workhouse, where she was put in the "consumptive ward," but her parents removed her after a few days there.

She worked next at a cotton mill for twelve months in the "doubling room," and later as a "reeler," but on account of headaches she had to leave off work occasionally. During this time she was getting dull mentally; she had little energy, wanted to stay in the house whenever she could. She kept on working till she had a "faint" and fell to the floor, after which she had to be assisted home, and did not go back to work again. At a public dispensary her parents were recommended to get her into Crumpsall Workhouse, where she remained a fortnight, and was then brought here.

She had measles and whooping-cough when a baby; has not had chorea or rheumatism. Both parents are positive that her hands and face have never previously been as they are at present.

On admission, March 13th, 1913, she was very stupid, could not give any account of herself, was dirty in habits, and had general choreiform movements; knee-jerks and pupil reactions were said to be normal.

At the end of May the skin on the dorsal surfaces of hands and wrists got red, rough, and scaly. The face was also involved, but to a less degree—the bridge of the nose and both malar regions. The condition was at first thought to be severe sunburn, for some other patients were undoubtedly sunburnt at the same time, but, whilst all the others got better, this case did not. During June cracks formed over the knuckles, the skin got thick and inelastic, and there was constant desquamation. In some of the deeper fissures pus formed under a surface scab. The skin on the flexor aspect of the wrist became involved, the skin of palm of hand was not affected. The nails were normal, and have remained so. The hair is thin, but appears normal. During several dull days in the early part of July the redness of the hands lessened and the epidermis had a light brown colour. On July 13th the patient was exposed to bright sunlight; on July 14th the hands were markedly reddened again.

During July 16th and 17th she was kept in bed in a subdued light. On the 18th the fading of colour was very noticeable. After being out again on the 19th and 20th her face and one hand had got a vivid red, and she indicated that the skin felt sore; the other hand had been covered with a glove and it remained pale. On July 25th the rash on the forehead, nose, both cheeks, and the chin is brighter than it has yet been.

Alimentary System.—Some "looseness" of the bowels with tendency to diarrhoea seems to have been present ever since admission. In June she frequently had five or six small dark motions in the twenty-four hours. The average lately has been rather less. The motions were offensive and dark in colour; they did not contain blood or mucus.

Nervous System.—Choreic movements were present on admission, and they have continued without much change in intensity ever since. The face and upper limbs are affected; the lower limbs and trunk very slightly. Voluntary movements were carried out with difficulty from the beginning—for instance, when feeding herself with a spoon she often missed getting the spoon to her mouth, and on some days this has been much worse (on July 15th she was unable to feed herself). The gait was ataxic and spastic, with considerable difficulty in turning. The muscles of the legs were rigid—not wasted. The knee-jerks were increased; there was no ankle clonus. The plantar reflex was normal on left side; there was a doubtful extensor response on the right side (July 15th). Both arms seemed slightly wasted; the grip was poor. Pupils were equal; reacted normally to light and accommodation; there was no nystagmus. The tongue was protruded in a jerky manner; it appeared normal. Sight and hearing are probably normal. Sensation normal. No apraxia.

On June 28th, when out walking, she fell suddenly to the ground, complained of pain in both legs, and had to be carried back to the ward.

There was tenderness to pressure on both sides of the spines of the mid-dorsal vertebrae.

Mental Symptoms.—From the date of admission she has appeared much demented. In June she was only able to read simple words of three letters; could write her name but not her address, although she remembered it and could say it. Simple questions in arithmetic and geography she made no attempt to answer. She does not now (July 15th) reply to questions at all, but can say a few words under the stimulus of emotion—for example, when annoyed. She understands simple commands. Usually she is placid and indifferent, but cries readily. She does not appear to have any idea of her own condition.

Pulse was 106 per minute; there was suspicion of presystolic murmur; respirations 16, irregular and jerky. Examination of lungs negative. Urine contained neither albumin or sugar; on boiling it gave a white precipitate readily soluble in weak acetic acid.

Oedema of legs was noticed on July 13th, worse on the left side than the right; after rest in bed on July 16th and 17th it disappeared.

A blood count on July 16th showed:

Polymorphonuclears	62.5
Small lymphocytes	22.5
Large	11.6

Other forms normal.

Cerebro-spinal fluid not examined.

On August 1st when I returned to Prestwich together with Drs. G. S. Blandy and Wilson the patient had slightly improved in her mental symptoms. She recognized me and seemed quite pleased to see me, but she continued to keep silent and moved with the same uncertain gait. Although she had been kept indoors, the eruption was of a more vivid red and was extending. There were fresh symmetrical patches with small blebs on the external surfaces of her forearms, and we also noticed erythematous spots on the upper eyelids which are seldom involved and were certainly not involved at the time of my first visit, as testified by a colour photograph taken at that time.

After examining this case, Dr. Stephenson showed us another case he had recently noticed in the asylum. A middle-aged woman presenting a pellagrous eruption on the backs of hands, on the face, and on the lateral aspects of the neck.

On July 24th I received a letter from Dr. Raymond Crawfurd informing me of an almost certain case of pellagra which had been under his care at King's College Hospital from December 11th, 1912, to January 18th, 1913. The patient, a woman 45 years of age, had come from Walthamstow, where she died about a month ago. In Walthamstow she was under the care of Dr. F. Percy Elliott. Dr. Crawfurd tells me that neither he nor Dr. Elliott had suspected the true nature of the disease until they read the accounts of cases in the BRITISH MEDICAL JOURNAL. Now they both feel that the case was one of pellagra. Dr. Crawfurd's notes on the case whilst in hospital are as follows:

Seven months ago noticed noises in the head coming from the right ear continuously, which prevent her sleeping. A month later had to give up work. Has been sent to Bournemouth and Brighton without benefit. Deafness came on four months ago in both ears, and has continuously increased; no discharge from ears. Varying degrees of redness of face and neck throughout illness; eyelids swollen as well as red; seborrhoea of scalp. Patient says that during last summer her hands also were red, but they were not visibly affected during her stay in hospital. She was persistently silent, sometimes morose, sometimes almost melancholic; for a short time she was actually dirty in her habits. Dr. Whitfield was asked to make a diagnosis of the skin condition, but he said it was nothing he was familiar with, and certainly not lupus erythematosus nor chronic erysipelas. Patient's mental condition gradually deteriorated during her stay in hospital, and there was no improvement in her hearing or in the condition of her face and neck.

In writing to Dr. Crawfurd about the further progress of this patient, Dr. Elliott says:

Athough not typical, the case had several features strongly suggestive of pellagra, and I wish Sambon had seen it. The sore, denuded tongue, becoming later peeled and bald with fissures; the severe stomatitis, with implication of fauces and uvula, together with attacks of salivation; burning pain on swallowing, salt taste and parotitis, first one side then on other, make up an alimentary group of symptoms characteristic of pellagra. She was having no mercury. Next the exacerbations of the skin eruption, the symmetrical distribution, sharply defined margin, the "butterfly patch"; bullae under eyes and on cheeks; subsequent hyperkeratosis of affected patches (very well marked indeed); slight desquamation, coarse, lustreless hair were all present in the case. Among nervous symptoms, attacks of tonic spasm causing on two or three occasions some loss of consciousness, tremor and clonic spasms in limbs, spasm in muscles of deglutition so great as to prevent swallowing for days together; the insomnia (specially bad), severe and persistent headache, vertigo, were all noted.

On July 29th Dr. Blandy's case at Napsbury Asylum died, and when I went on the following day together with Dr. Wilson for the autopsy, Dr. Blandy showed me three more pellagrins which he had discovered amongst the inmates of the asylum. These cases, together with the two in Prestwich and the earlier ones in the Montrose and Aberdeen Royal Asylums, lead one almost inevitably to suppose that there must be similarly unrecognized cases in the other asylums of the United Kingdom.

Considering its great importance as a factor of insanity, now that the presence of indigenous pellagra in this country has been fully demonstrated, it seems to me that we should make every endeavour to ascertain as soon as possible its exact distribution and prevalence.

ABSCESS DUE TO STREPTOTHRIX EPPINGERIS (ACTINOMYCES ASTEROIDES) RESEMBLING A STAPHYLOCOCCAL INFECTION.

By W. BROUGHTON-ALCOCK, B.A., M.B.Cantab., M.R.C.S., L.R.C.P.Lond.

(Laboratory of Professor Metchnikoff, Pasteur Institute, Paris.)

I have been led to publish this case not only on account of its rarity, there being but six already published, but to demonstrate the error into which one may fall, as I did myself in making a hasty diagnosis. Foulerton[1] has drawn attention to the difficulty of making the diagnosis clinically, and the necessity for careful bacteriological examination.

The patient, a maniac aged 48, confined in an asylum, was placed in a cell on November 23rd, 1912, because of his agitated condition. It is an interesting observation that in his cell there was a loose bedding of straw, which he was constantly throwing about. On December 2nd, 1912, the house surgeon noticed oedema and lymphangitis around an abrasion on the right thigh below the great trochanter. Unrelieved by palliative measures, it was incised on December 9th, and half a pint of blood-stained dark yellow, non-smelling pus was evacuated. This showed on microscopical examination débris, degenerated leucocytes, and Gram-positive cocci. The appearance of a few colonies of staphylococci on the agar tubes after eighteen hours led me to presume a staphylococcal infection; the clinical signs and progress supported this view. The patient had had a temperature of 39° C. to 39.5° C. during the previous four days, and was very ill. I gave a vaccine of 30 million living sensitized staphylococci. There was no local reaction and no reduction of the temperature. The patient continued to sink, and died on December 14th, 1912.

Five days after sowing I noticed on the gelatine isolation plates numbers of non-liquefying pale yellow colonies, which microscopically showed non-motile short filaments and cocci; both retained the Gram stain. There were but four colonies of *Staphylococcus aureus*. Repeating the sowing of some pus that had been stored in the ice-house I obtained similar results. Anaërobically, nothing grew on either occasion. The blood of the patient, sown on the day of operation, was also negative. An autopsy was not permitted. I did not think there was a cerebral abscess.

Suspecting a streptothrix from the microscopical examination I chose certain media for cultures.

On glycerine potato there was definite growth in forty-eight hours—nodular, undulated, and irregular, and changing from orange to brick-red day by day.

On carrot, no growth.

On glucose agar, as on potato.

On ordinary agar, similar but slower growth.

On gelatine, colonies slowly growing, yellow, viscous, round-bordered, with ill-defined halo; non-liquefying.

On broth, similar to that on potato, as a veil at the top; liquid clear. At the bottom a cloud-like greyish culture studded with small pale orange-coloured nodes.

Anaërobically there was no growth.

After one month on the solid potato and agars, also on the liquid at the bottom of the potato tube, there were white areas, some defined, some as borders, which by the hand lens appeared as projecting filaments. Microscopically these showed, as the original pus, Gram-positive cocci-like spores. The nodular red and tenacious mass showed Gram-positive rods; a few only lost the violet colour. On staining by the Ziehl-Nielsen method for acid-fast properties, the red colour persisted in the cocci and rods, though the latter retained the stain better at certain points along them.

The injection of a platinum loopful (1 c.cm.) in saline into the peritoneum of a medium-sized guinea-pig killed it in five days. Autopsy showed enlarged and congested kidneys and suprarenal glands. The mesenteric glands and those along the lower border of the stomach and in the omentum were markedly conspicuous and yellow in colour. The sowing of one gave a pure culture. The brain was normal and the blood sterile. Nothing macroscopically was seen in the lungs. An unfortunate accident prevented histological sections.

Injections intravenously and intraperitoneally into mice gave no results. It was only after the cultures were one month on media that I injected two rabbits, first subcutaneously and a week later intravenously. The subcutaneous injections were slow to absorb, but there was no abscess. The intravenous infection was innocuous. The doses were similar to that given to the guinea-pig.

These animal experiments are extremely limited, and the fact that the results on the rabbits do not correspond with those made during the complete and valuable researches of Eppinger,[2] Nakayama,[3] and McCallum,[4] probably bear upon the age of the culture and smallness of the dose employed.

In conclusion I wish to express my deep gratitude to M. Pinoy for his generous and invaluable counsels during these observations.

References.

[1] *Lancet*, February 8th, 1913. [2] *Ziegler's Beiträge zur path. Anat.*, Band ix, 1890. [3] *Arch. f. Hyg.*, lviii, 3 fasc. [4] *Centralbl. f. Bakt., Parasit., und Infect.*, May 14th, 1902.

THE TREATMENT OF CHRONIC PROGRESSIVE DISEASES OF THE SPINAL CORD BY X RAYS.

WITH AN ACCOUNT OF TWO CASES.

By FRANCIS HERNAMAN-JOHNSON, M.D.,

Darlington.

The "reading up" of spinal cord lesions is a melancholy business for the student of medicine. He finds in text-books an elaborate classification of symptom-groups into so-called diseases, the names of which he learns with much labour. But if he is called upon to acquire a knowledge of the distinction between progressive muscular atrophy, ataxic paraplegia, disseminated sclerosis, and the like, he is saved the effort of learning any etiology to speak of beyond the time-honoured "cold, wet, exposure, fright, and mental worries." Nor does it take long to peruse the paragraphs devoted to treatment, for they consist of little more than a list of those remedies which have been tried and found useless.

Later on, when he begins to see these cases in practice, he finds as often as not that they will not fit into any particular textbook pigeon-hole. The average physician is content if he can (*a*) distinguish between functional derangements and organic mischief; (*b*) exclude active syphilis or tubercle; and (*c*) differentiate "idiopathic" disease from that due to "parasyphilitic" toxins. If one can make out with certainty that the patient is suffering from chronic progressive disease of the spinal cord which is neither tuberculous, nor syphilitic, nor parasyphilitic, it is of little practical importance whether the malady does or does not fit in with any classical description. In any case, the etiology is unknown, the prognosis bad, and ordinary medical treatment non-existent.

I make the foregoing remarks because the cases which I have to report are somewhat difficult to name. Yet both are undoubted instances of spinal cord degeneration, in which the diagnosis has been confirmed by recognized authorities; and any conclusions which may be drawn from their reaction to treatment may justly be applied to cases presenting a more usual combination of symptoms.

Some years ago certain Continental observers began to use *x* rays and radium in the treatment of syringomyelia, disseminated sclerosis, etc.; they reported considerable improvement. I myself began to use radio-therapy at the beginning of the year 1911, and as this treatment has not, to my knowledge, been much used in this country, I think it may be worth while to set forth my results up to the present time.

Case I.

Miss R., aged 18, sent to me by Dr. A. C. Farquharson of Spennymoor. This girl complained of pain and weakness in the right arm and shoulder of some months' duration, and of general loss of energy and spirits. She appeared pale and anaemic. Inspection showed general wasting of the muscles of the forearm, arm, and shoulder girdle on the right side; also slight wasting of the muscles of the left thigh, about which, however, no complaint was made. No plantar reflex could be elicited on either side; the knee-jerks were normal. Tremor was absent, there was nothing peculiar about the speech, and eye signs were lacking. All the affected muscles reacted fairly well to the faradic current. A radiograph, taken to exclude tuberculous disease, showed lateral curvature of the spine in the upper dorsal and cervical regions, with some bevelling of the vertebrae.

I was puzzled by the case, but made a provisional diagnosis of late infantile paralysis. (There was a history of an attack of "influenza" some six months before, but the patient was not clear as to whether or not it had preceded the muscular weakness.) Acting on this assumption, I began a course of faradic stimulation of the affected muscles. Rapid improvement took place, and at the end of ten weeks the pain had subsided,

voluntary power was much improved, and but little apparent difference remained between the two shoulders.

Encouraged by these results, I ventured on a favourable prognosis, and stopped treatment; telling the parents to bring the girl back for another course in two months' time.

In rather less than this time, however, she returned, complaining again of pain in the arm. The clinical picture had in the meanwhile greatly changed, and was now unfortunately only too clearly one of progressive spinal cord disease. The shoulder had maintained its improvement, but there was marked tremor in both hands. The interossei of the right hand were markedly wasted, and both the little and ring fingers were partially flexed, owing to paresis of their extensors. The adductors of the thumb and the muscles of the hypothenar eminence were also much atrophied. The patient stated that both hands felt "clumsy," and that the right had no power.

I was now compelled to tell the parents that a progressive, and probably incurable, spinal cord lesion was present, and advised that *x* rays should be tried as the only treatment likely to be of any real benefit.

A fortnight after the commencement of irradiation the tremor began to subside, and by the end of two months had altogether ceased. Meanwhile the contracted fingers were massaged, and their wasted muscles faradized, with the result that they became almost straight. The pain in the arm proved somewhat obstinate, but finally disappeared, seemingly as the result of treatment to the arm and shoulder by means of an electrically driven vibrator.

At the end of six months, when the patient had received in all forty sittings, I decided to stop the irradiation. The girl had been obliged to give up cycling, piano-playing, and sewing, but she was now able to resume all these occupations and amusements, with the exception of difficult music and fine needlework. Her general health also had much improved; she looked robust; and it would have required more than a casual examination to detect any trouble.

After another two months she again presented herself. There had been a somewhat sudden return of extensor paralysis and pain in the arm. These symptoms disappeared in a few weeks under treatment directed to the cervical spine; but, while actually undergoing this course, she developed pain and stiffness in the small of the back. Relief followed the irradiation of this region. Since then I have never allowed more than a week to elapse without seeing her.

In the summer of 1912 the patient consulted Purves Stewart. He confirmed the diagnosis of progressive cord degeneration, and said that so far as he could name the trouble, it was disseminated sclerosis, localized chiefly in the cervical region. As to treatment, he advised that *x* rays should be continued, in conjunction with medicinal tonics.

More than two years have now elapsed since the disease first definitely manifested itself, and the patient is now about as she was after the first six months' treatment. That is to say, by means of, or at any rate coincidently with, constant *x*-ray treatment the improvement has been maintained for a period of over eighteen months.

CASE II.

Mr. H., aged 33. Sent by Dr. Martin, of Darlington. Between six and seven years ago this patient noticed a weakness in the left ankle when playing tennis; the "springiness" of his toes seemed impaired. He thought little about the matter at first, but the weakness grew steadily, though very slowly, worse. Next came tingling sensations in the right arm and at the tip of the tongue; also some loss of control over the bladder and over the rectum so far as flatus was concerned. Finally, a commencing weakness in the hitherto sound leg greatly alarmed him, and he consulted Risien Russell. Russell told him that he had a chronic progressive disease of the spinal cord, for which little could be done, but advised him to undergo a course of electrical stimulation of the leg muscles, in the hope that at least some temporary benefit might ensue.

In view of this advice, his own medical attendant, Dr. Martin, sent the patient to me. I agreed to carry out the treatment recommended, but suggested that, in addition, *x* rays should be applied to the spine.

At this time there was extreme wasting of the calf muscles of the right leg, and some atrophy of those covering the back of the thigh and buttock. Power to extend the foot had been completely lost, and the calf muscles responded to the galvanic current only. On the opposite side the calf appeared small in proportion to the remainder of the limb. The right buttock responded to faradism, provided that an intense current was used, and then only after it had passed for some seconds. In the other limb faradic reactions were all brisk. Plantar reflexes were absent on both sides; both knee-jerks appeared somewhat exaggerated. Neither eye-signs, nor tremor, nor abnormality of speech could be detected, and sensory perception appeared to be unaltered.

After three months' treatment reaction to interrupted currents began to return in the extensors of the left foot, and a limited amount of voluntary movement became possible. Also, the buttock muscles now responded to moderate stimulation, and had increased considerably in size. These results in themselves might perhaps be put down to the effect of faradic electricity, but the same could not be said of the improvement in the arm and tongue symptoms. The tingling sensations also disappeared, and have not so far returned (eight months). The patient himself summed up the matter subjectively by saying that he felt as if his disease had retraced its steps by more than a year. At Christmas the patient went to Switzerland for a holiday and received no treatment for about three weeks. He came back complaining that there had been some retrogression of voluntary power in the calf muscles, which he first noticed by reason of not being able to push himself up by his toes whilst having a bath. On the resumption of treatment, the power returned.

Up to the present there has been no improvement in the condition of the bladder and rectum.

That spinal-cord disease of the type under discussion is liable to natural remissions, and even passing improvement, is, of course, well known; and it is open to the sceptic to say that these patients would have improved equally in the absence of any therapeutic measures. In both cases, however, cessation of treatment was followed by relapse within a short period, and in Case II there was a history of slow but steady degeneration over a period of years without any sign of even temporary betterment.

Looking at the matter from the standpoint of pathological theory, it is of interest to recall the views of Hastings Gilford, as expressed in a recent work.[1] He believes that spinal cord lesion of the "idiopathic" type, together with cancerous tissue change and many other degenerations, are in reality instances of premature senile change. Carrying the matter further, he holds that cells which are senile, whether normally or prematurely, show a tendency to reproduce some of the characteristics of their embryonic stage. They become simple in structure, lose their specialized functions, and commence anew to proliferate. But whereas true embryonic cell division proceeds in an orderly manner to a definite end, pseudo-embryonic or senile proliferation is purposeless and anarchic.

Assuming that there is some truth in this view, we may suppose that, amongst other reacquired embryonic peculiarities, is an extreme susceptibility to the effects of *x* rays and radium. The effect of rays in small doses on normal adult cells is to stimulate their growth; but such doses need not be too small to produce an opposite effect upon embryonic cells. Hence may be explained such anomalies as that *x*-ray treatment may at one and the same time depress the cells of a rodent ulcer while stimulating the normal epithelium to spread across the raw surface which has occurred as the result of cancerous activity. In the case of sclerosis of the cord we have, on the theory under discussion, proliferating prematurely senile or pseudo-embryonic cells, together with more or less normal cells weakened by their proximity. From judicious irradiation we may therefore expect a two-fold effect—namely, depression of the unhealthy neuroglia cells, together with stimulation of such neurones as are not too deeply injured to respond.

Whether or not the above explanation of their *modus operandi* be correct, the use of *x* rays in certain types of spinal cord disease appears to be clinically justified. Radiotherapy combined with the persistent local application of electricity is at present the only treatment which holds out any hope of amelioration; and any patient, once a diagnosis of progressive idiopathic degeneration is established, should be told of its possibilities.

X-ray treatment, for whatever purpose applied, usually seems to have a general good effect upon the body functions, comparable with that of electricity or medicinal tonics. Apart from this, its action on cord diseases, as in cancer, is a purely local one. It will be recalled that, in Case I, symptoms referable to the lumbar cord came on actually during a course of treatment limited to the cervical spine. As to permanence of effect, while it is easy to inhibit the growth of embryonic cells, it is difficult to kill them outright. For example, the permanent sterilization of a healthy young woman by means of *x* rays is almost impossible. Where we have to deal with intravertebral disease, it is probably not feasible to do more than hold the degeneration in check. In other words, the patient must lead an "*x*-ray life" comparable with a "thyroid life" in cases of myxoedema. Although, even apart from question of expense, this may seem a poor prospect, it must be remembered that the victims are often men in early middle life, the fathers of young families wholly dependent upon their exertions. To such the prolongation by even a few years of business or professional activity may be a matter of the utmost importance.

REFERENCE.

[1] Hastings Gilford, *The Disorders of Post-Natal Growth and Development.*

EIGHTY-FIRST ANNUAL MEETING
OF THE
British Medical Association.
Held in Brighton on July 23rd, 24th, and 25th.

PROCEEDINGS OF SECTIONS.

SECTION OF NAVY, ARMY, AND AMBULANCE.

Colonel JAMES TURTON, V.D., F.R.C.S., President.

PRESIDENT'S INTRODUCTORY REMARKS.

AFTER the expression of a welcome to members of the Section and some allusions to the work to be done, Colonel J. Turton turned to the subject of the further development of the Territorial Medical Service, in regard to which he spoke as follows:

As members of the Section are well aware, the existing Medical Department of the Territorial Force leaves a large and serious gap between the field medical units on the one hand and the general hospitals on the other, and in order to provide the personnel for filling up this gap during mobilization for home defence, the War Office has delegated to the British Red Cross Society and other similar associations the duty of organizing certain units composed of individuals of both sexes—Voluntary Aid Detachments. The raising of these bodies has met with considerable success throughout Great Britain, and notably in this, the county of Sussex, as will be recognized from the following statistics:

BRITISH RED CROSS SOCIETY: SUSSEX BRANCH.
Voluntary Aid Detachments.

	Number.	Personnel.
Men's	20	975
Women's	79	1,137
Totals	99	2,112

This portion of the work having been thus far accomplished, it would seem only natural to expect some effort to be made to give these organizations a more definite character and a more precise status in the scheme for home defence; but beyond arranging for an annual inspection of these detachments by an army medical officer, nothing has been done by the authorities to provide, in this respect, a stable and complete organization for the Territorial Medical Service, upon which service would doubtless devolve, in the event of a European war, the entire work of the Army Medical Service in this country.

Let us for one moment consider what the gap in the Territorial Medical Service represents. It means that in the confusion of a hasty mobilization (for modern wars are waged with little or no previous warning) the personnel and matériel of such essential medical units as clearing and stationary hospitals, medical store dépôts, convalescent dépôts, and ambulance trains, not to mention supplementary establishments, such as rest stations and auxiliary hospitals, would have to be organized and improvised, while provision would have to be made for sanitary sections and squads, and sick transport by road, river, and possibly sea.

Seeing, therefore, the immensity of the problem involved, it is evident that, in the interests of home defence, a serious attempt should be made in advance to educe out of the materials at hand a complete organization to meet the medical contingencies of a general mobilization for home defence.

It is contemplated that, on the mobilization of the Territorial Force, a Director of Clearing Hospitals should be appointed for each division of the Force. Under existing conditions the lot of such an officer during his first few weeks of office is not pleasing to contemplate, for it must be borne in mind that, putting aside the question of active military operations, from the first day of mobilization he would have to deal with a constant stream of sick and disabled men, the prompt disposal of whom would be demanded in the interests of humanity as well as of military efficiency, and he would be expected to perform this duty with an unorganized and therefore non-existent staff.

I consider that these officers should be appointed forthwith. They could then, in concert with the Red Cross authorities, arrange in advance schemes of organization for mobilization, having regard to the war stations of their respective divisions and the military topography of their divisional areas.

Similarly a Director of Ambulance Trains might be appointed for each divisional area.

Small nucleus units of clearing and stationary hospitals personnel should be formed as permanent units of the Territorial Force, in the proportion of one of each to each divisional area.

Steps should also be taken to, as far as possible, allot to the Voluntary Aid Detachments in advance their precise duties, respectively, on mobilization.

As no scheme has hitherto been published for the higher organization of the Territorial Force into Field army, line of communication troops, and garrisons, it is difficult to deal with the corresponding medical establishments, but I consider it would be a step in advance if a few of the Assistant Directors of Medical Services, Territorial Force, were promoted to Deputy Directors; they could act as organizing officers in time of peace, and serve on head quarters staffs and in other similar capacities in time of war.

It is a strange fact that, although the deficiency in numbers of Territorial officers is generally recognized and deplored (a deficiency which exists in the Medical Department as in all other branches), the authorities are continually placing on the retired list senior officers who have completed their term in command of their respective units.

These officers are mostly in the prime of life, keen and experienced, and they are retired when they are still capable of and often willing to render further service if suitable employment could be found for them, and in the Medical Department, at any rate, it is clear that useful employment could be found for such officers in the work of rendering more complete the medical organization of the home defence army.

THE WORK OF THE BRITISH RED CROSS SOCIETY'S UNITS WITH THE BULGARIANS.

By MAJOR E. T. F. BIRRELL, R.A.M.C.,
Late Commandant, British Red Cross Society's Services for Bulgaria, Balkan War, 1912-13.

ON November 3rd, 1912, the British Red Cross Society dispatched two units to Bulgaria, each consisting of three surgeons, four dressers (in place of a dresser in one unit an *x*-ray operator was included), and twelve men graded as nursing orderlies, general duty orderlies, and cooks.

The equipment was practically the field medical and hospital equipment of two tent subdivisions of a field ambulance, with certain additional surgical equipment in the case of No. 2 unit, an *x*-ray apparatus with a petrol motor and dynamo, and a supply of blankets, reserve surgical dressings, condensed milk, meat extract, chocolate, biscuit, and other articles likely to be of use for the wounded but not too bulky for transit during the long journey across Europe. As it was hoped to obtain on the spot beds, mattresses, and other articles of hospital furniture and ward equipment, bulky material was not sent out.

A large quantity of iodine (3 lb.) and the same quantity of potassium iodide, operating gowns and caps, indiarubber gloves, stovaine and the necessary apparatus, eucaine, emetine, typhoid vaccine, and insect powder were among the specially selected equipment.

Sofia was reached on November 7th, and the units came under the direction of Surgeon-General G. D. Bourke, C.B., the Director of the British Red Cross Society's Balkan Services. Orders being received to proceed to Stara Zagora with the prospect of going on to Kirk Kilisse and forming a hospital there, the two days' halt in Sofia was spent in buying what could be obtained in the way of cloth for mattresses and pillows, for sleeping suits, shirts, etc., needles, thread, soap, brushes, cleaning material, rope and string, and other articles which it might be difficult to obtain near the front.

The units entrained for Stara Zagora on November 9th, arriving there that night, one going on to Jamboli, then rail-head next day. On the way two ambulance trains were met, with wounded from Lule Burgas. One train consisted of passenger coaches with wounded lying on the seats, and covered baggage-wagons in which the men lay or sat on a little straw or matting. The other was composed of baggage-wagons only. The men were in good spirits, and seemed to make little of their discomforts and sufferings. No doubt the great majority, if not all of them, were slighter cases, but even so their fortitude was remarkable.

At Jamboli the baggage was transferred to bullock and buffalo wagons, and sent ahead with a baggage party to Kizil Agach, where the personnel followed next day in motor lorries and motor cars. Here General Bourke was recalled to meet the expedition sent out to Servia, and the units commenced their march to Kirk Kilisse, following more or less the regular convoy route. On the way several convoys of wounded were met travelling in the bullock-wagons which had taken supplies to the front. These wagons were not unsuitable for sick transport over such country, as, loosely constructed of wood, they swayed and yielded to irregularities of the ground, and, although apt to jolt, this fault was lessened by a thick layer of straw, or in special cases a litter with a mattress, on which wounded could lie in tolerable comfort. Three cases could travel sitting up, or one lying down in each vehicle.

Kirk Kilisse was reached on November 17th, and a block of what was known as the New Barracks, built by the Turks about eighteen months or two years before, was allotted to us on the 19th. It was in use as a hospital, and was full of wounded from Lule Burgas. These were evacuated, and we commenced preparing the building on the 20th, being urged to complete our arrangements as early as possible, as already wounded were pouring in from the severe fighting at Chatalja on November 16th to 18th.

The building handed over to us was one of four in the same enclosure, close to the road leading south-east out of Kirk Kilisse, and about two miles from the town. The other three blocks were occupied by the Russian Red Cross Hospital. Our block consisted of two stories with three barrack rooms in each, an attic on top which we used as a quartermaster's store, pack store, and ration store, under the able management of Captain W. Byam, R.A.M.C., who acted as quartermaster, and a wider portion at the end comprising several small rooms which we used for the operating theatre, dispensary, *x*-ray room, ward kitchen, and quarters for myself and another officer, besides affording a room for the lady interpreters who had come with us from Sofia. The attic, we found, had not been touched since the Turks left, and it afforded much that was useful in the way of barrack furniture, besides desks, entrenching tools, rifle cases, and ammunition boxes, which being tin-lined came in very handy when the wards were being equipped. The barrack rooms contained sufficient Turkish barrack bed-cots to complete our requirements in that matter, besides a certain amount of furniture—tables, stools, etc., which were of use. Everything, however, required thorough cleaning, and the first step was to carry all the bedsteads and other movables outside, and scrub them with soap and water. The mattress cases which we found were emptied and carefully overhauled. Any fit for use were boiled and hung up to dry, the others were burnt. It was found that in the recesses below the staircases much filth had been deposited; this had all to be cleared away, the walls cleaned and whitewashed, the woodwork and windows cleansed, and the floors thoroughly washed down. Even after all this, after the hospital had been in use some weeks, it was found that we had been happily ignorant of one unpleasantness. On taking down one of the barrack-room shelves in a ward then empty, for the sake of the brackets which were required elsewhere, it was discovered that the wall behind was covered with bugs, fortunately then hibernating.

The surroundings of the hospital required much "spade work." The Bulgarian is careless in matters of hygiene, and much labour had to be expended in cleaning up the ground and burying or burning the material which lay about. The presence of the foundation trenches of an unfinished building helped to facilitate matters, as in them a great quantity of old straw, mattress cases, the rubbish which was found littering up the attic floor, and much of the filth which soiled the surroundings of the hospital was buried. Burning was not always safe, as many live cartridges were found in the sweepings from the attic, which had apparently been an armourer's shop, but a rectangular incinerator, the construction of which was almost the first thing to be done, did useful work in that direction. A system of surface drainage had to be instituted, facilitated by the occurrence of heavy rain.

While these preparations were going on, sewing parties, under the direction of one of our lady interpreters, were busy in the town making up mattress cases, pillow cases, sleeping suits, etc., from the material we had brought from Sofia, and from cloth we had obtained locally. Meantime, also, the town was searched for anything we could obtain in the way of articles suitable for ward or hospital equipment, and plans were made for rationing the patients, cooking their food, and so on.

A party of reservists was allotted to us for fatigues and to help in the wards, and women were sent whenever they could be obtained to wash floors and do similar cleaning work.

One difficulty was that no part of the building could be spared for use as a kitchen. It was all too small for the number of patients we wished to accommodate. Consequently field kitchens had to be constructed outside, and in this we were fortunate in having the services of a man who had been a cook in the Royal Army Medical Corps and had also served in the Royal Engineers. He quickly constructed with bricks and a section of trolley line a fireplace to take the large cauldrons used for the patients' food, and placed at one end a length of stove pipe, which earned for the structure the name of "The Rocket." At a later date a nearly completed building close at hand was roofed over for us, and in this a large kitchen and quarters for the officers and men were arranged.

Another difficulty, and one which was always with us, was water. None had been laid on to the barracks, and the supply had to be carried in barrels on bullock carts from a spring about two miles distant. This meant that the barrels had to be filled by hand and the water run into tanks outside the hospital, and into these tanks any one could dip any promiscuous utensil. Thorough supervision was impracticable, and to have attempted to boil the water was considered a snare and a delusion. After much delay a raised tank with a pump was constructed, but as soon as it was installed hard frost set in and put the apparatus out of action. To counteract the risk of bad water—and even at its source it was not above suspicion—the personnel were provided with tea at each meal, and in the wards tablets of sodium bisulphate, two to each water jar containing about two quarts, were used, probably too weak a solution, but no ill effects were ever traced to the drinking water.

Conservancy required much supervision. Commodes, after much delay, were placed in the stairway landings, where also kerosene tins did duty as night urine tubs. Outside, near the trench latrines, disposal pits were dug, with a supply of water in an empty rifle box with which to wash the bed-pans, and a cauldron in which all pans and urinals were boiled daily. This was carried out under the supervision of a trustworthy non-commissioned officer who had charge of all sanitary duties. After a few weeks a latrine on the removal system was installed.

Kitchen sullage from the field kitchens first in use was emptied into a pit through a grease trap consisting of a straw-filled box with holes in the bottom. When the inside kitchen was ready, sullage was run out through a pipe in the wall to a kerosene oil tin filled with straw, standing on legs, and emptying over a drain leading to a series of three deep trenches used on consecutive days. This system worked well so long as it was seen that a trench was used for no more than one day, and that, after the sullage had soaked away, the soil at the bottom was loosened before the trench was used again. Dry kitchen refuse was burnt on the fire or in the destructor.

With the surgical equipment brought out it was possible to equip the operating theatre fairly completely. Linoleum was bought for the floor. A glass-fronted bookcase did duty as an instrument cupboard; zinc was forthcoming for covering a table or two; we had a folding operating table, and with a few pots of white enamel for the tables,

woodwork, etc., the semblance of a modern operating theatre, under the management of Major C. Hudson, D.S.O., I.M.S., was not far amiss.

There was, however, no sink and no water supply. Everything had to be carried out by hand, and cleaning up after an operation was a lengthy business, involving great labour on the part of Major Hudson and his assistants, whose efforts, however, were rewarded by the good surgical results their scrupulous care made possible.

A small shed was built for the motor used to charge the accumulators of the *x*-ray apparatus, and the equipment itself was placed in a small room of which the window was boarded up and further darkened by blankets. For the charge of this department we were fortunate in having the expert services of Mr. H. W. Cox, and his apparatus did work which was much appreciated not only by us but by our friends of the Russian hospital, the Women's Convoy Corps, and the Bulgarian hospitals in the garrison, who sent their patients for examination.

The first convoy was received on the morning of November 26th, all wounded from Chatalja, and many of them extremely serious cases. By arrangement with the local sanitary inspection we were sent a large proportion of severe surgical cases for operation, and on this account the numbers which passed through our hands were much smaller than even the limited accommodation at our disposal could have dealt with.

On the morning when the first convoy arrived no bullocks were forthcoming to bring water, and we could get none until 1 o'clock, except from a very doubtful and inadequate well in the enclosure. This of course delayed matters, and things were not improved by the shortage of rations, which were not received until the evening, at which time the extra supply asked for in anticipation of the convoy's arrival was delivered.

All the wounded which we admitted (161) had received their injuries a week to a fortnight previously, and all, except, I believe, one man whose wound had healed by first intention, were septic. While the majority were due to small-arm bullets, there were many shrapnel wounds and one from a hand grenade.

Of the effects of the Turkish sharp-pointed bullet it is perhaps hardly safe to dogmatize at present. Few foreign observers had opportunity of seeing its wounding powers as shown on the battle-field. Their experiences were mostly limited to cases able to travel down the line of communication. It may be that the tendency of sharp-pointed bullets, which have the centre of gravity near the base, to turn on encountering even a slight resistance and so inflict a severe wound, even on traversing soft tissues, may have resulted in many deaths on the field from haemorrhage or severe internal damage. At present the evidence is not conclusive. What practically all have affirmed—and our observations correspond—is that in the wounded sent down the lines of communication the results of the sharp-pointed bullet were practically the same as those of the better-known ogival-tipped missile. In many of our cases the bullets had lodged, and neither examination under *x* rays, nor the subsequent operation for removal, served to confirm the anticipations that the bullet is apt to turn over or be deflected. No such changes were found, and the only deformed bullet extracted had been a ricochet. The Bulgarians frequently remarked that the Turkish bullet was a humane one, and surprise was expressed at the few men killed in comparison to the number of wounded; but these were only the impressions of officers who had seen necessarily limited portions of the campaign.

One condition exhibited by the wounded and which was particularly striking was the craving for sweet things. In some men it almost amounted to an obsesssion; they continually asked one for more sugar, and offered even to buy it from us (as if that had been possible), and the Bulgarian word for sugar ("zachar") constantly recurred in their conversation. In a man shot through the face, whose wounds were suppurating very freely, and who was much reduced by illness and the difficulty of feeding himself, the condition was specially evident. We ourselves suffered from the same want.

In the war-scale daily ration for the Bulgarian army, 2 lb. 10 oz. of bread, 14 oz. of mutton or beef, 3½ oz. of beans, dried or fresh vegetables, 7 oz. of potatoes, and $\frac{7}{16}$ oz. sugar form the principal ingredients, besides an allowance of salt, lard (1½ oz.), red pepper, tea or coffee, and 7 oz. of cheese or salt fish as substitutes for meat. This ration contains far more bread and less meat than ours, and is deficient in sugar. In the British army 2 oz. of the latter, 1¼ lb. of bread and 1¼ lb. of fresh meat are allowed in the normal ration on active service, and we found the bread in the Bulgarian ration far too much, the meat not enough. Fats also were deficient (the allowance of lard was not, I believe, available). It was only occasionally possible to purchase extra meat, and sugar in excess of the ration was only obtainable towards Christmas. For the troops at the front, supplies had no doubt been scanty, and for ourselves on the march down and even in Kirk Kilisse during November and early December rations were frequently short, and the physical work fairly severe. The "sugar-hunger" felt by the patients and, in lesser degree, by the personnel was merely the physiological expression of their needs, accentuated in the case of the wounded by the tissue-wastage of suppuration. Some of us showed "starvation-lines" upon the finger nails, corresponding apparently in time to the period of hard work and "short commons" during the march down to Kirk Kilisse.

Of medical cases only 64 were admitted. These were mostly the result of cold and exposure, such as bronchitis, bronchopneumonia, frost-bite (1 case), and a few cases of oedema of the legs and feet, the origin of which was obscure, but was attributed by the men themselves to exposure in the trenches. The condition cleared up after a few days' rest in bed. Dr. C. Clarke treated many cases of enteric fever in a neighbouring hospital with typhoid vaccine. His results—which I believe will be published—cannot fail to be instructive, and while I feel I must leave him to speak for himself, I think I may say that, clinically, the impression one gained was that under vaccine treatment the disease pursued its normal course, but that excess of toxin was counteracted, as shown by the disappearance of toxic symptoms and the freedom from complications.

There are one or two points in the reception and despatch of convoys which were found to be of practical importance. One was the desirability of being able to provide each man with hospital clothing on arrival, so that his underclothes, soiled as they often were with blood and even pus, might be boiled and washed and his uniform at least fumigated to rid it of vermin. This was necessary not only for cleanliness and comfort, but in view of the risk of typhus exanthemata, a few cases of which did occur in a neighbouring hospital.

In the earlier weeks our supplies of clothing were insufficient except for cases confined to bed. For others, washing and fumigation was done piecemeal, and with the help of insect powder and small-tooth combs—which the Bulgarians themselves carried—pediculi were at least kept within bounds. Fumigation was carried out in the pack store, the clothing being hung up on lines and sprinkled with water and then exposed to the fumes of sulphur burnt over water.

It was necessary to be careful not to destroy any clothing that could be worn again. So soiled and torn were many of the undergarments and articles of uniform that medical officers were often tempted to have them burnt as of no more use. We could to a certain extent provide men with underclothing from the Red Cross stores sent out to us, but fresh uniforms could not at first be obtained, and one or two men had to be sent towards the base without nether garments. Fortunately the Bulgarian soldiers' great-coats are long and their boots or leg-bandages are high, concealing outward deficiencies, and we were able to provide warm substitutes for the missing articles.

The hospital remained in our hands until January 15th, when, on recall to England, we handed it over, with the remaining patients, to the Bulgarian authorities, who caused it to be taken over by the personnel of one of the line of communication hospitals, assisted by three English lady doctors who had come out with the Women's Convoy Corps and remained behind on the departure of the rest of their party.

The British Red Cross Society's units returned to Sofia on January 19th, where they met with a very kind reception, and reached London on the 25th of the month, after exactly twelve weeks abroad.

THE RELATION OF AND UTILITY OF AEROPLANES IN CONNEXION WITH MEDICAL SERVICES IN THE FIELD.

By Lieutenant-Colonel J. D. F. DONEGAN, R.A.M.C.

I APPEAR before you to-day for the purpose of discussing the possibilities of the uses of aërial appliances to the medical services in the field. Dr. Reymond, the celebrated French aviator, has alluded to the hygiene and physiology of airmen before the Military and Naval Section at the Congress in Paris, and no doubt many of you have read his most interesting and instructive lecture.* I sadly lack the experience of Dr. Reymond on this most interesting subject, and I will therefore limit my remarks to the practical aspect.

Fig. 1.—Table on low level for the purpose of reduction of dislocation, or when required for use in shellproof trenches with limited head room. Showing the aerial cradle in use as a side table for holding instruments.

As you are no doubt aware, our aërial fleet consists of the old balloon, man-lifting kites, airships, monoplanes, hydroplanes, biplanes, and hydro-biplanes.

Balloons cannot be of much use to the medical service, except that possibly small balloons lit with dry-cell batteries might be used for designating the locality of hospitals at night time in towns and on lines of communication, as at present our distinctive mark is not sufficient to make their whereabouts clear to airships dropping explosives.

As regards airships, I have no doubt that within a very few years they will be used for the removal of wounded on account of the rapidity with which they can work; at present, owing to difficulty in landing and rising, they could not be so utilized, but I feel confident that before many years have passed those of us who are alive will see airships replacing our present ambulance trains for sitting-up cases, if not for the more serious ones.

Monoplanes, as you know, are not regarded favourably in our army at present, but when perfected they can be used similarly to biplanes for medical purposes. Hydro-planes are not likely to be of use to a land force.

Fig. 2.—Table closed up, measuring 22 in. by 42 in., and fixed on plane. It can also be carried by motor car, motor bike, taxi, or in wagon, cart or on horseback. Weight, containing 46 lb. of surgical equipment taken from present field panniers, is roughly 93 lb., which can be reduced to 80 lb. if so desired.

Biplanes.—The evolution of the biplane type of aeroplane owes its origin to the ingenuity of an Englishman, named Francis Herbert Wenham, who as far back as the year 1866 made a machine which lifted well, but failed for want of structural strength.

The hydro-biplane, Colonel Cody's newest invention, is the machine in which my ambulance experiments have been made. This machine is the largest thing of its sort yet made; driven by a 100-h.p. engine it has a speed of over seventy miles an hour, which is quite fast enough for ambulance purposes. By adjustment it can start or land on either ground or water, and it can carry with the greatest of ease the operating table with all surgical contents, three medical officers, and if it were necessary to do so it could, I should say, carry two wounded men; but that experiment as yet has not been tried. Smaller aeroplanes and monoplanes could be utilized for the transport of the table and one expert.

One of the most difficult problems for an A.D.M.S. in the field is how best to utilize the services of his officers. According to regulations these officers are detailed for duty with medical and combatant units, but it must be remembered that squadrons of mounted troops get detached for scouting duties, and it is impossible for the one medical officer authorized for the regiment to be subdivided. In the event of a full regiment of cavalry having a serious casualty list when perhaps thirty or forty miles away from the main army, the surgical treatment of the wounded becomes too big a matter for a solitary medical officer; beyond rendering primary aid he can do no more. By utilizing the biplane additional medical assistance can always be provided. No guards or escorts are required, and in calculating distance and time a mile per minute can be taken as a standard. From this it can be realized that the services of surgical specialists can be obtained not only from the field medical units, but also from clearing and stationary hospitals miles away.

In staff rides and war games we notify the A.D.M.S. that we are leaving thirty patients whose injuries are so serious as to render their removal inadvisable. It is quite possible that there may be no medical man within miles, and it is more than probable that an ordinary provincial practitioner might not relish the idea of doing twenty major operations on patients scattered about the country in different farmhouses. Under the Geneva Convention we can rely on the civil inhabitants to look after the creature comforts of the wounded and on the nearest medical practitioner to attend to ordinary cases. With aërial transport we can do our own serious operations. I was asked by a gentleman if medical officers could be ordered to fly, as he did not think so; thirty years ago he could have said that an officer could not be ordered to ride a bicycle; fifteen years ago he could have said that he could not be ordered to go in a motor. Aërial transport has now progressed from infancy to the advanced puberty stage, and is but a small degree removed from adolescence or perfection. As regards risk, why war is all risk, and the medical officers are not asked to drive or start the biplane, but simply to share the danger of the pilot, and go as passengers. I feel perfectly sure that in real warfare no officer of the corps—or, for the matter of that, no member of our noble profession—would question the mode of transport should his goal be professional assistance to disabled comrades.

* His lecture was very kindly sent to me by Surgeon-General W. W. Kenny, K.H.S., who takes great interest in this subject.

I do not propose to monopolize biplanes for medical purposes; I regard them in the same way as heliographs in the field are used to convey any message—that is, to be of any assistance they can. Those are, I can assure you, the views of flying men; and they would consider it no indignity to pilot a medical officer going to the assistance of a wounded and helpless man.

There are many who consider that the aërial service will be otherwise engaged, and not available for the purpose I have mentioned; but, in my humble opinion, in actual war the medical service can get any single thing it wants.

I now produce for your inspection the operating table devised for aërial transport. It is my own invention, and has been made by Messrs. Arnold and Sons, Giltspur Street, London, who hold the patent rights. As you will see, the table is without legs, but as legs may be desirable in the event of my idea of concentrating surgical requirements appealing to civilian operators or to medical officers of the Royal Navy, I produce the rough wooden model of a form of support which has occurred to me.

As you will notice, it consists of two combined triangles, and has therefore great supporting strength, also that it closes up into a small space. Nothing in the form of a portable leg of half-inch or even inch diameter will give the required support for an operating table on sandy soil, rocky ground, or on any steep gradient. Still, as far as I can judge, for military purposes in the field legs are not required, as a field ambulance can never be without its panniers and reserve dressing cases, and they form an excellent support. In any form of stationary hospital in a civilized country, the ordinary barrack trestle table should be available, and its strong heavy legs are quite suitable for the aero-operating table. Bedside tables will also do. When the table is separated from a medical unit, as, for instance, when it has been flown to the assistance of detached troops, ammunition boxes, tins of compressed beef, or hay, sacks of oats, and rifles can be improvised into supports. Even in a barn there would be in some neighbouring house boxes, water barrels, small tables, trunks or blocks of wood, and they would answer the purpose. Even, for example's sake, say that there is nothing whatever available in the shape of a support, a certain amount of elevation is provided in the table itself, so as to allow an operator to work kneeling on one knee. That I have done myself in what was popularly known as a "funk-hole" in Ladysmith, and I see no reason why the contingency should not arise again in war.

The next point to which I refer is the concentration of equipment. As you know, at present in a field ambulance the necessary requirements are packed away in different boxes. The very packing of these boxes in the Army Medical Stores requires the services of an expert. So you can imagine the difficulty of returning the articles to their respective compartments after use in the field. This table carries 46 lb. of equipment, and sets free space occupied in our panniers which in the first instance could be packed up with bandages and expendable dressing material, so that every time things were taken out it would be easier to put them back. The following are the articles carried in table:

Apparatus, saline infusion	No. 1
Bandages, loose woven	No. 12
Calico, thin	4 yds.
Containers, vulcanite (50 corrosive sublimate tabs)	No. 1
Drainage tubing	1 tube
Instruments, operation (or surgeon's roll)	1 set
Inhaler, Skinner's	No. 1
Pins, safety	2 boxes
Sterilizer, 1905 pattern	No. 1
" " " spirit container for	No. 2
Silk skeins, plaited	1 tin
Tin of soda	No. 1
Tin of sodium chloride	No. 1
Tubes, iodine powder	No. 20
*Stovaine syrin	No. 1
*Solution for case	No. 1
*Gloves, rubber	6 pairs
*Surgical gauntlets	2 pairs
Towels, aseptic	6
Case, hypo., '98 pattern	No. 1
Cartons of chloroform tubes (6 oz.)	No. 3
Drop bottle for chloroform (in leather covered case; 2 oz. chlor.)	No. 2
Forceps, tongue	No. 1
Tube, ethyl chloride	1 tube
Stopcock for ethyl chloride tube	No. 1
Bandages, triangular	No. 6
Gauze, D.C. compressed, 2½ yd. packets	27½ yds.
Wool, D.C. compressed, 2 oz. packets	1 lb.
Wool, C.A. compressed, 2 oz. packets	½ lb.
Sponges, abdominal	No. 6
Spirit lighter	No. 1
Tape, measuring (spring)	No. 1
Stethoscope, aluminium	No. 1
Nail brushes	No. 4
Soap cakes	No. 4
Field tourniquets	No. 4
Cloth, waterproof	2 yds.

* Not provided in present equipment.

There is no necessity for rigid adherence to this list; the operator can take whatever he so desires and leave out what he does not require.

As you are no doubt aware, at present to do an operation on the line of march, if such a contingency were necessary, would practically mean opening five cases—operating table, 1 and 2 surgical, and 1 and 2 medical panniers—whereas, on the other hand, the "aero-table" contains everything necessary. Again, the present pattern field sterilizer will not hold a large operating knife, whereas with the "aero-table" there are six dressing trays, two measuring 22 × 17½ in., and four measuring 16 × 9 in. For abdominal operations in cold climates this table can be heated by a very simple means. Head elevation and extremity elevation are also provided for. Further, the table can be foreshortened for rectal operations. There are no compartments for packing; things can be put in wherever they will fit.

Our present field operating table is opened by a railway-key. Without the key the case must be broken before the table can be got at, and after being broken open the case cannot be properly closed. In this table three alternatives are provided for: (1) Lock up in the usual fashion; (2) lock up and leave key in the little secret drawer provided for it; (3) give up locking up and keep both keys and lock in the drawer referred to until required. The aero-table can also be used as a stretcher on which the patient can be carried to his bed or other resting place after his operation is finished.

I hope you will not look on me as a captious critic. I have suggested that the system which I have described is an improvement on our present one, but I am fully alive to the fact that before to-morrow morning dawns one of you may have devised an infinitely superior one.

A brother officer asked me some while ago if I proposed to have aeroplanes full of medical experts flying over the heads of charging cavalry ready to swoop down and tie arteries and do abdominal resections on the spot. He also wanted to know from statistics the number of surgical operations done in the field. There was a lot in his argument, as I certainly do not approve of operating in the field. He eventually agreed with me that if surgical appliances were carried in the field they would not be injured by being concentrated in one package instead of being packed in several, and he also realized that it was possible that the man left unfit to be moved might require some surgical aid, if not the next day, at least the day after, and that with aërial transport it would be possible to afford this assistance.

SPINAL ANALGESIA IN MILITARY SERVICE;

WITH A NOTE ON 600 CASES.

By MAJOR J. W. HAUGHTON, R.A.M.C.

SPINAL analgesia as now practised was introduced into this country some six years ago, when Mr. Barker published a monograph on the subject in the BRITISH MEDICAL JOURNAL of March 23rd, 1907. The suitability of this method in military surgery was immediately recognized by Major Spencer, R.A.M.C., and a report on our first 50 cases operated on in the Queen Alexandra Military Hospital, Millbank, was published in the *Journal of the Royal Army Medical Corps* of November, 1907.

The accumulated experience of the past six years has convinced me of the advantages of this method, and I propose to summarize here the results of my last 600 cases

operated upon in the Military Hospital, Aldershot, during the past three years, in which spinal analgesia was the routine anaesthetic for all operations on regions below the level of the sixth dorsal segment of the spinal cord.

Summary of Operations.

Herniotomy	156	
Appendicitis (acute)	63	
Appendicectomy (à froid)	60	
Gastro-enterostomy	2	
Enterectomy	1	
Intestinal anastomosis	2	
Other laparotomies	10	
Operations on kidney	1	
Resection of ribs	1	
Total abdominal		296
Piles and fistulas	82	
Pubis and genitalia	95	
Reduction of dislocated hip	1	
Amputations (leg, thigh, and foot)	3	
Wiring fractured patellae	5	
Removal semilunar cartilage of knee	36	
Other operations on lower limbs, wiring or plating fractures	82	
Total non-abdominal		304
Total abdominal and non-abdominal operations		600

There are a few points in this table which call for remark. There was in this series no case of failure to enter the dural sac. There was no case where injection was not followed by adequate analgesia. There was no case which gave cause for any anxiety as to the safety of the method. There were six cases where analgesia did not last to the end of the operation. These were lengthy procedures, in which the operation was completed under chloroform inhalation.

As regards the after-effects of injection in this series, they were fairly uniform—26 per cent. of the patients experienced slight faintness or nausea within fifteen minutes after the injection. This condition passed away quickly, and the patients became drowsy and comfortable; on returning to the ward 6 per cent. vomited. Among these are included cases where vomiting was present before operation. Headache was reported in 28 per cent. of the cases; it was usually mild, and seldom interfered with the patient's sleep. In 40 per cent. of the cases injected there was no discomfort of any kind, either during or after the operation, and in the words of the theatre attendant "they did not turn a hair."

That spinal analgesia as a routine procedure is preferable to inhalation anaesthesia in military surgery is now realized by those who have studied both methods, while its great value to the surgeon on active service or abroad has been widely appreciated. I have used it in West Africa, and found the black man as amenable as the white.

In the recent Balkan war it was used in the British Red Cross Hospitals sent to Turkey and to Greece.

Time does not permit me to discuss the technique of spinal analgesia, but a full description of the method will be found in (1) *A System of Operative Surgery*, vol. i, edited by Mr. Burghard; (2) in Keen's *Surgery*, vol. vi; and (3) in the *Royal Army Medical Corps Journal* of December, 1912.

The advantages of this method to both patients and surgeon are numerous and obvious. Amongst them may be mentioned the patient's (1) increased safety and freedom from the toxaemia of a general anaesthetic; (2) the total abolition of operative shock; (3) the retention of consciousness. To the surgeon: (1) The relaxation of muscular tissue is complete. This degree of relaxation is unattainable by other methods of anaesthesia, and is a great help to rapid operation. (2) The services of an anaesthetist are not required. Operations can be carried out single-handed if necessary. (3) The techniqus and apparatus are simple, portable, and inexpensive.

As in the administration of any other anaesthetic, the best results can only be obtained by careful study and an intelligent technique. They are part;cularly applicable to the use of spinal analgesia, which demands, in addition, a high level of surgical cleanliness and attention to detail,

THE USE OF KINESITHERAPY IN THE AFTER-TREATMENT OF INJURIES RECEIVED IN WAR.

By Major Durey,
French Territorial Army.

There is very little literature on this subject, for until European armies began to use small-bore bullets the mechanical after-treatment of wounds was only rarely required, as formerly the destruction of the soft parts, the injuries to the bones, the almost certain infection of the wound generally necessitated amputation. Now that different armies use bullets of 6 to 8 mm. calibre and antiseptic methods are generally employed amputation is only rarely performed.

The surgeon does not only aim at preserving the limb; he tries to restore to the parts affected all their functions and to avoid the establishment of permanent disability; hence the necessity of kinesitherapy—that is, treatment by massage and passive motion.

But the methodical use of this treatment is itself of recent origin and in France at least it was not used before the year 1880.

Since then there have been no wars in Europe to provide us with material.

At the present time we have to deal with two distinct classes of wounds—namely, those caused by infantry bullets and those due to artillery projectiles.

If we take the recent Balkan war, according to the report of the French military surgeon Cousergues, shrapnel bullets cause large wounds often containing fragments of clothing and very liable to suppuration.

As regards wounds produced by explosive shells, their characteristics, according to the French surgeon Delorme, are that they are more or less extensive, with much bleeding, and complicated by lodgement of fragments of the missile.

These two kind of wounds form only one-tenth of the total number. The great majority of injuries amenable to kinesitherapy are produced by rifle bullets.

The military surgeon Cousergues reports, according to his personal experience in the Balkan war, "the rifle bullets make very small wounds comparable to those made by a trocar. Owing to their great penetrating power they generally produce an entrance and an exit wound not always easy to distinguish."

On the other hand, Professor Delorme, speaking of the German "S" bullet used by the Turks, says: "The perforations in the epiphyses are cleaner cut than the perforations of the diaphyses of the long bones, fractures are less comminuted, and in general the mass of loose splinters is less extensive and the fissures narrower."

The experimental test of this opinion is advanced by Professor Kalliontzis (from Athens) in his report to the French surgical society: "The penetrating wounds of the joints, mostly those of the knee, healed generally without complications, leaving a very useful joint. Complicated fractures of the long bones by rifle bullets were frequent; they healed as easily as subcutaneous fractures, while those caused by shrapnel were serious and difficult to cure. The conservative methods have been strictly applied in the treatment of complicated fractures and have given me the best results. I succeeded in curing my patients without performing any amputations in 62 cases of serious complicated fractures."

From these very recent experiences it appears that the number of cases of injuries of the bones of the limbs amenable to conservative treatment will increase in the years to come. In these cases after the cure of the wound the surgeon must consider the necessity of restoring to the limb its normal function.

It is in these cases that kinesitherapy is called for. In similar cases met with in time of peace the rule is to practise massage or passive motion as soon as possible, according to the nature of the injury and the skill of the surgeon. In time of war it will be impossible to apply the same rule. The patient must first be transported to a medical unit at the base. The wound must be given time to heal.

When mechanical treatment is begun the first application must be made by the surgeon, or at least by an experienced trained attendant. It is not advisable to trust an ordinary

assistant to apply early passive motion to a recently wounded joint not long healed or to a limb in which the fractured bones have not become solidly united.

According to the great majority of authors, the treatment of wounds in war, implicating the bones or the joints, will require the use of massage and passive motion. But this treatment is long, requires great care and experience. Is the medical staff of European armies prepared to carry it out?

In the case of a Continental war France will put at least 1,200,000 into the field. Taking as basis the figures given by Hermann Fischer for the Russo-Japanese war, these forces would have about 160,000 to 180,000 wounded, of which 100,000 would be wounded in the limbs. Three-quarters of these, at least, will require some form of manual or mechanical treatment.

It has often been said that war is "an epidemic of traumatism." I believe that, although the medical services of armies have done all in their power to contend with this epidemic, yet they have neglected its sequelae.

With us, Dr. Hirtz, attached to the Military Hospital of the Dey, in Algiers, has had occasion to test the usefulness of kinesitherapy on the wounded coming from Morocco. During the year 1912 he had to treat 62 wounded, of which half have been cured, one quarter much improved, and another quarter has derived no benefit. From these results Dr. Hirtz concludes: "Without the help of physiotherapy the number of permanent invalids would have been much greater and likewise the pensions to be paid by the State."

It must be taken into consideration that this small number of patients required almost four thousand individual sittings; one may judge from this the amount of work which will have to be undertaken by the medical service, especially if one bears in mind that a skilled masseur cannot treat more than 12 to 15 patients in twenty-four hours.

From the relation of this figure to the probable number of wounded which I have previously mentioned as likely to require the kinesitherapic treatment, it is easy to conclude that a specialized staff and equipment will be wanted.

I know that in all countries the effort made by the military medical service will be augmented by private societies for affording help to the wounded and that in most of these societies some ideas of massage are imparted to the nurses, but hazy ideas are insufficient for the successful application of treatment, often delicate and requiring not only correct manual technique, but also medical knowledge.

It is to be desired that in time of peace the military medical services should create special departments of kinesitherapy, where a certain number of army surgeons, as well as a good many assistants, would be trained to carry out this form of treatment; also that the hospitals should be equipped with a mechano-therapy apparatus.

The evolution in the nature of the missiles must bring an evolution in the surgery of war; it is the surgeon's part to adapt himself to it. More frequently than formerly he will be able to attempt to restore to the wounded a useful limb. Amputation will be seldom performed, and more use will be made of kinesitherapy. In wars to come a great number of surgeons will be required in the medical services at the base, and these should be skilled in the use of massage, passive motion, and mechano-therapy.

A PROPOSED LIGHT AMBULANCE FOR YEOMANRY REGIMENTS.

By D. G. Kennard,
Lieutenant R.A.M.C (T.F.).

A number of yeomanry regiments have an ambulance of one sort or another; this paper endeavours to show the advantages of a light ambulance wagon suitable to any country, whether over roads or in open country. This wagon is, of course, quite distinct from the cart provided by the regimental transport officer on mobilization for the transport of 5 cwt. of medical equipment and stores, and it is also quite distinct from a light ambulance wagon that might be provided by the ambulance column, and attached to a regiment on special service. The light ambulance wagon that I am going to describe is to be the property of the regiment and to be a part of the regiment.

The regimental band are the official stretcher-bearers in yeomanry regiments. Neither the band nor the stretchers appear on parade, field days, or during manœuvres or schemes at annual training. Should the regiment drill

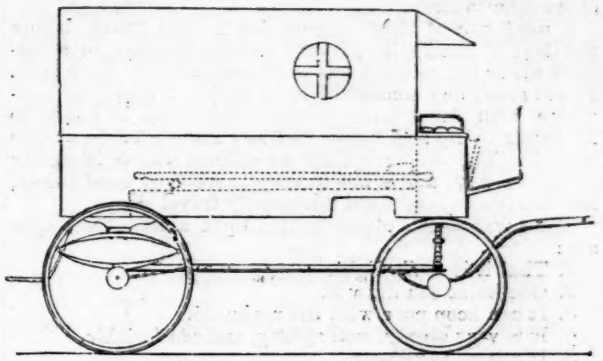


Fig. 1.—Model I. Full lock (side view). Raised body to allow wheels when turning to lock under carriage. Price complete £50.

perform exercises or schemes some way from camp, what is to become of the soldier who meets with an accident during these manœuvres? A cart of some sort has to be commandeered from somewhere for his conveyance back to camp.

More or less serious accidents on parade occur almost daily during camp, and some available means of transport is essential. The light ambulance would accompany the regiment on parade, and its position would be made known to all squadron leaders so that it could be found at once when required. The ambulance is so light that it can keep pace with the regiment, and can go anywhere the regiment can go. It is capable of going over any country, any bad track, and in fact anywhere that horse artillery can go.

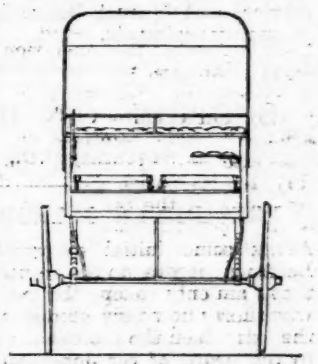


Fig. 2—View of Model I from back.

It is constructed after the pattern of the four-wheeled American buggy. The body is longer and wider, and capable of holding two stretchers side by side. There are two models. Model I has four wheels. The two front wheels are a little smaller than the hind wheels, giving it a full lock. The front wheels turn under body, which has been raised to allow of this, and the wagon can turn on its

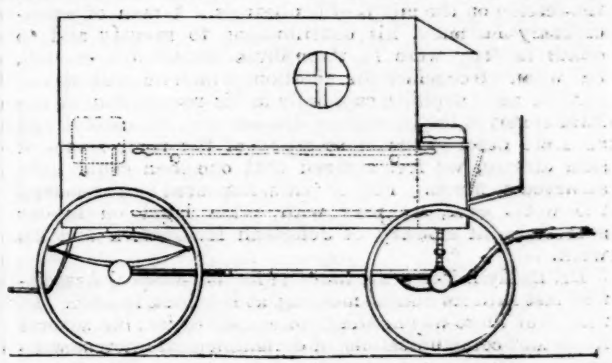


Fig. 3.—Model II. Side view.

own wheel base. Model II has wheels of the same size, a low body and a quarter lock. The wheels are made of hickory, and are very strong. It has three springs—two back and one front. It is well sprung, strong, and comfortable. It has two seats at the back, which fold up on to the side of the wagon, for two bearers, and a front seat for the driver and another bearer if necessary. It is fitted with

a hood and shafts for one horse. The total weight, with stretchers, is about 5 cwt. The stretchers run in on rails like the ordinary light ambulance wagon, and are secured in position with straps.

A cob of 14 hands can draw it anywhere, and it is almost impossible to turn it over. Any one can drive it and there is nothing to get out of order, and it takes a very short time to clean.

I used one of these wagons for several years, before the days of motors, in ordinary country practice in a district where the country was open with a lot of down land. It will stand any amount of hard work. I could go anywhere with it. I have driven horses from 16 hands to 13 hands in it, and never had any trouble or breakages with it. The ordinary light ambulance wagon in reality is very heavy, and it has to keep to roads or good tracks, has two horses, and must necessarily travel slowly.

The advantages I claim for this light ambulance wagon are:

1. That it is really light.
2. One horse can draw it.
3. It can keep pace with the regiment.
4. It is very strong, well sprung, and comfortable.
5. It can go anywhere.
6. That it adds strength to the regiment, in that in case of accident the wagon and bearers are on the spot. The injured soldier is at once attended to and the other members of his troop who are with him are relieved of the soldier and of holding the horses of those attending him.

All yeomanry regiments should have their own ambulance, and, after seeing many different patterns, I am convinced that the wagon I have described to you represents the best ambulance for this particular branch of the service, and I trust before long it will be adopted by yeomanry regiments.

SECTION OF DERMATOLOGY.

J. H. SEQUEIRA, M.D., F.R.C.P., President.

PRESIDENT'S INTRODUCTORY ADDRESS.

AFTER some initial observations, the PRESIDENT said: Before proceeding to the actual business of the day, I know that I am only voicing the feelings which animate us all when I say how very greatly we in this Section deplore the loss which the profession in this country has sustained by the death of Sir Jonathan Hutchinson. I joined the London Hospital too late to see any of his work in the wards, but I frequently had the privilege of hearing him lecture as Emeritus Professor of Surgery at that institution and elsewhere. I am sure that all who heard him will agree with me when I say that as a clinical teacher Hutchinson was unique. He had so many interests, such a vast storehouse of experience and a prodigious memory, that he was able to focus light from so many points upon the subject which he had in hand, and to leave an indelible impression on the minds of his hearers. A man of extraordinary industry, his contributions to surgery and to ophthalmology were in themselves remarkable enough, but when we consider the additions which he made to our knowledge of syphilis, especially in his recognition of the later stages of the hereditary disease, and his careful and accurate descriptions of so many of the rarer forms of skin disease, we feel amazed that one man could have achieved so much. Full of years, honoured and respected the world over, we may with pride hand on to our successors the memory of Jonathan Hutchinson and his work.

Dr. Daldy informs me that the British Medical Association last held its annual meeting at Brighton in 1886. In that year there was no Dermatological Section, but several important communications of dermatological interest were made. Professor Liebreich read a paper introducing lanoline to the profession in England, and Dr. Mackey communicated a paper on the use of resorcin in cutaneous diseases. A paper was also read by Dr. Handford on the pathology of the seborrhoeic affections of the hair follicles. The study of the diseases of the skin has grown so wide that an annual exposition of the recent advances made in the subject is expected, and it speaks well for the vitality of our specialism that we have so full a programme even with the International Congress occurring in a fortnight.

The intensity of specialism which is so prominent a feature of modern medicine does not permit the development of such all-round men as Jonathan Hutchinson, but it is important that we dermatologists should not forget that our branch of study is but a part of general medicine. We have learnt much from the consideration of the lines of research carried on in other branches, and especially from the work of the bacteriologist and the clinical pathologist. It would be perhaps presumptuous for a practising dermatologist to suggest that workers in our own field may have contributed something which is of practical value to the general physician and surgeon, but I think we can feel pride at the results of the application of the methods of bacteriology to the study of the fungi of ringworm. We are to-day to discuss the fungous affections of the glabrous skin, and I think that you will agree with me that this subject shows very well the trend of modern investigation.

We shall discuss affections which at one time were placed in the great class of the eczemas, and which we now know to be the inflammatory reaction of the skin to the presence of certain fungi. With the acquirement of this knowledge accurate diagnosis is possible, and with it rational and successful treatment. Then, again, our knowledge of the closely related streptothrix organisms has received important additions. At Liverpool last year Dr. de Beurmann gave us a valuable account of his work on the sporotrichia, and we now know that certain gummatous affections which were previously indistinguishable from syphilis and tuberculosis are caused by this type of organism, and, moreover, that in their localized stages they are amenable to treatment by the iodides.

An important advance in syphilology during the year is of the greatest interest to dermatologists. It is the demonstration by Noguchi and others of the *Spirochaeta pallida* in the brain in general paralytics, and in the cord in some cases of tabes dorsalis. The importance lies in the fact that in many instances the patient comes to the dermatologist for the treatment of his early cutaneous affections. Whether the early diagnosis of syphilis which is now possible in practically every case by the demonstration of the spirochaetes in the serum from a chancre, or by the Wassermann test, and our better understanding of the necessity for early and intensive treatment will prevent these grave nervous sequels, time alone can show.

But we have to record another important advance, one which may be of incalculable good to the community, and that is the movement, and fortunately it is a powerful movement, to deal boldly with the whole question of venereal disease. As medical men we must rejoice that important lay journals in this country have opened their columns to the appeal of the profession for the appointment of a Royal Commission; and I beg to offer my sincere congratulations to the pioneer of the movement, Sir Malcolm Morris, on his being able to overcome at last some at least of the prejudice which has always surrounded this thorny question. I trust that medical men and women everywhere will support this movement, and will do all in their power to get light thrown upon this dark subject, and make every endeavour to dispel the ignorance which exists on these grave issues.

There are many interesting problems awaiting solution in connexion with some of the commonest diseases of the skin, and some of our greatest difficulties lie now in the group of conditions which we have labelled "toxic." One of the most characteristic of these—lupus erythematosus—has been chosen for the second discussion. Here we are at present outside the field of experimental medicine, and we have to accumulate facts and draw deductions from them. In this connexion I cannot allow the opportunity to pass without calling attention to the important series of papers on pellagra which appeared in the BRITISH MEDICAL JOURNAL on July 5th, 1913. Pellagra, like syphilis, is of the greatest interest to the dermatologist and to the neurologist, and until recently it was believed that this country was singularly free from the disease. Dr. Box in the JOURNAL referred to the deaths of two lads who had always lived in the neighbourhood of London, and has illustrated the characteristic conditions by a coloured plate. Dr. Mott and Dr. Sambon also contributed to the same number of the JOURNAL, and

Dr. Hammond published an account of a case he had observed in the Isle of Wight. The publication of these cases has led to other instances being recognized, and we have to realize, as has been the case for some time in the United States, that we have a formidable affection to fight. For a long time, as you know, pellagra has been looked upon as a disease due to poor surroundings, and especially to the use of diseased maize as an article of food. It was classed as one of the "toxic" diseases, but there is reason to believe that it is of parasitic origin, and evidence is being accumulated in favour of this hypothesis. The whole subject is well worthy of the earnest attention of the profession.

DISCUSSION ON FUNGOUS INFECTIONS OF THE GLABROUS SKIN.

OPENING PAPER.

By H. G. ADAMSON, M.D.Lond., F.R.C.P.,

Physician for Diseases of the Skin to St. Bartholomew's Hospital.

THERE has been in recent years a considerable advance in our knowledge of fungous diseases and of the fungi which cause them. The number of these affections has been greatly enlarged, not so much by the discovery of new diseases as by the inclusion in this group of many previously known complaints which have only lately been recognized as of fungous origin.

In this discussion we are concerned only with fungous affections of the glabrous skin, and I shall deal with them under the following headings:

1. Ringworms of the glabrous skin, including ringworm of the groin and ringworms of the extremities.
2. Favus.
3. Actinomycosis, blastomycosis, and sporotrichosis.

Time will not permit me to include the interesting but comparatively unimportant affections pityriasis versicolor and erythrasma beyond mentioning that they are types of very superficial infections of the skin by a mould fungus. Nor shall I deal with tropical diseases.

Additions to Knowledge.

Important additions to our knowledge of fungous diseases of the skin are: (1) The inclusion in the group of body ringworms of certain eruptions due to infection by ringworm derived from animals, particularly from the dog, the cat, the horse, and from cattle. (2) The final proof that eczema marginatum of the groin is really a ringworm, and the discovery that many so-called eczemas of the hands and feet are also ringworms. (3) The demonstration of the animal origin of certain forms of favus; and above all (4) the discovery of the new disease sporotrichosis, formerly mistaken for syphilis or tubercle, but due to a deep invasion by a mould fungus.

Of tinea circinata, or body ringworm, there are many varieties. The fungi which give rise to them differ in virulence, and consequently we get different types of eruption corresponding with the varying degrees of inflammatory reaction.

For clinical purposes we may divide these "body ringworms" into three groups: (1) Red scaly patches or rings, generally associated with the ordinary ringworm of the scalp; (2) somewhat more inflammatory rings due to infection from the cat; (3) highly inflammatory ringworms derived from horses and cattle.

Body Ringworms.

As regards the first group, any of the ringworms of the scalp of small-spored and large-spored varieties may be accompanied by ringworm of the body, face, limbs, or trunk, in the same patient or in some one associated with the patient. The eruption consists of sharp circular patches or rings, red and slightly scaly, representing a mild form of inflammatory reaction. The lesions are generally multiple, sometimes they are exceedingly numerous. When the scaly rings are very numerous and widespread, associated or not with scalp ringworm, one may always suspect a microsporon of animal origin—either from the dog, cat, or horse—the affection appearing in these animals as a form of "mange."

The second group—namely, those due to a large-spored ringworm derived from the cat—are seen commonly in children. There is generally a single ring (or at most two or three) which is more inflammatory than those accompanying scalp ringworm and has its margin studded with tiny vesicles—the so-called "herpes vesiculeux" of old French writers. An inflammatory vesicular ringworm always suggests cat origin and the advisability of inspecting the domestic cat for bald patches, sometimes scaly or crusted, and from the surface or margins of which infected hairs can be obtained. The third group comprises the ringworms derived by infection from the larger animals, horses and cattle. They are seen on the hands or arms of farm labourers and of those who have to do with horses; and sometimes the beard region may be infected by these fungi. The eruption is usually single and it is always markedly inflammatory, in the form of a raised, sharply margined disc or nodule covered with small pustules—the "folliculitis conglomerativa" of the older writers. A noteworthy feature in regard to these inflammatory ringworms of animal origin is that they have a tendency to spontaneous cure, and that a patient once infected is protected against a subsequent attack.

Ringworms of the Groin and Extremities.

The group formed by ringworm of the groins and extremities is particularly interesting from the clinical side, since some of the eruptions it comprises have been until comparatively recently mistaken for eczema. The old name for ringworm of the groin was "eczema marginatum." Although the mycelial parasite was discovered in the scales so long ago as 1864, its relationship with ringworm has remained a disputed point until finally settled by the cultivation of the fungus by Sabouraud in 1897. Sabouraud has shown that the disease is a ringworm due to a fungus distinct from all others. It is one which attacks only the flexures of the groins, the axillae, the fold under the mammae in women and the clefts between the toes and fingers. Curiously enough it never invades the hair; and Sabouraud has named it for this reason "Epidermophyton," as opposed to "Trichophyton." During the past ten years this eruption, eczema marginatum or tinea cruris, has been prevalent in this country among men of all classes, often in epidemics in schools, colleges and other institutions, women being but seldom attacked.

The observations of Whitfield in London and of Sabouraud in Paris have taught us that, associated with this ringworm of the groin, there is often an eczematoid eruption of the toes, or less often of the fingers, and that many so-called chronic eczemas of the toes or fingers are really ringworms. The practical importance of this knowledge is obvious. Both ringworm of the groin and eczematoid ringworm of the toes are exceedingly chronic affections: if treated as eczema they will last for years; with treatment for ringworm they may be cured within a few days. Tinea cruris begins in the groin and extends down the inner side of the thigh on to the scrotum and backwards between the buttocks towards the coccyx. Its characteristic features are: (1) The wavy and festooned margin, studded with minute vesicles at its outer edge, scaly towards its inner edge, and enclosing a buff coloured area; (2) the chronicity of the eruption, its occurrence in epidemics, especially among men, and the frequent secondary invasion of the axillae and of the interdigital spaces. Between the toes the disease appears as red "peeled" areas, sometimes weeping, with scaly margins, extending a little way on to the sole or dorsal surface and a little way on to the toes and foot. Sometimes on the backs of the toes and foot the margin is vesicular. A point of practical importance is, therefore, in all cases of "eczema" between the toes, to inquire as to the previous or present existence of groin ringworm. Another practical point is that ringworm of the groin cannot arise by infection from ringworm of the scalp, because it is produced by a different fungus. Infection takes place from another groin ringworm—in rare instances from husband to wife, generally from one male to another, probably by means of closet seats.

But this eruption associated with ringworm of the groin is not the only form of ringworm of the extremities. Ringworm may occur on the hands and feet from infection by one or other of the human or animal ringworms. Among others the large-spored ringworm of the cat may occur on the fingers or hands, or even on the palms, and simulate eczema. The fungus, which gives a violet culture

and which gives rise to one of the common forms of scalp and beard ringworm, may also produce vesicular lesions on the fingers and hands, and this particular fungus may even give rise to bullous eruptions. All these ringworms of the extremities are revealed by the sharp margin of the eruptions and the finding of fungus in scrapings. There is also a very striking form of ringworm which occurs between the toes and extends a good way back on to the soles of the feet, in which the thick epidermis of the sole is, as it were, peeled off, leaving a red surface with overhanging margins. This is the plantar ringworm of Djelaleddin-Mouktar. It is generally of animal origin, the naked feet having become infected in walking over floors on which pet animals suffering from ringworm have dropped hairs. I have observed several examples of this type of ringworm, but have no photographs of my own cases, and so show a reproduction of the classical model of Baretta in the St. Louis Hospital museum.

Treatment of Glabrous Skin Ringworms.

The treatment of ringworm of the body and extremities is simple. All we have to do is to destroy the fungus in the horny layers by some local antiseptic. There is no indication for *x*-ray applications. One of the most generally employed applications is iodine; and for the groin ringworms, chrysarobin or Goa powder is a well-known remedy; but no application is so rapid in its curative effect and so cleanly as the ointment suggested by Dr. Whitfield and containing gr. 15 salicylic acid and gr. 15 benzoic acid to the ounce. Even the groin ringworms and the eczematoid ringworms of the fingers and toes, hitherto difficult to cure, are rapidly cleared off by this new application.

Favus.

We come now to *Favus*. Several varieties are known. Apart from the common favus of the scalp, due to the *Achorion schonleinii*, there have been recorded: Favus of the mouse, *Achorion quinckeanum;* favus of the horse, *Achorion gypseum;* favus of the fowl, *Achorion gallinae;* and quite recently, by Bruno Block of Bâle, another mouse favus, *Achorion violaceum*. Each of these varieties of animal favus has been communicated to human beings. But except by mouse favus, human infection from an animal is very rare. Favus of the scalp (due to *Achorion schonleinii*) was until recently not uncommon in East London among Polish or Italian children, but it has now been practically eradicated by isolation and *x*-ray treatment carried out under the direction of the London County Council.

We still occasionally see in London examples of mouth favus of the glabrous skin. The eruption appears in the form of red scaly rings indistinguishable from ringworm except by culture, or unless, as often happens, the lesion bears one or more of the typical sulphur yellow scutulae or "favus cups." The fungus in culture is a luxuriant white downy growth more resembling the cultures of ringworm than that of ordinary favus. In 1909 I showed, at the Dermatological Society, cultures of *Achorion quinckeanum* obtained from a favus eruption on the neck of a baby which slept on the floor, and from a mouse with favus on the head caught in the same room. Benno Chajes and Tomasczewski have recorded similar occurrences. I have since met with two other cases of mouse favus in human beings, and Dr. MacLeod and Dr. Bolam of Newcastle have also recorded cases. Mouse favus in human beings is therefore perhaps not very rare. It gives rise to eruptions on the glabrous skin which are readily cured, and does not cause scalp favus. This is a practical point, for it assures us that the efforts of the London County Council to stamp out favus of the scalp will not be nullified by the reintroduction of the disease by means of infected mice.

[Lantern slides were shown of ringworm derived from the dog, the cat, the horse, and from cattle, and of favus from the mouse.]

Contrast between Infections of Human Origin and those Derived from Animals.

If we now consider these infections as a whole we are able to draw a striking contrast between those peculiar to human beings and those derived from animals. As regards the "human" forms, it would seem that the body has become accustomed to these fungi and does not greatly resent their presence. Therefore there is but little effort at defence—that is to say, but little inflammatory reaction; and, too, there is little, if any, general immunity reaction, so that the disease continues to invade fresh areas and may last for years and years, as seen in the case of groin ringworms and interdigital ringworms, in tinea tonsurans, in tinea of the nails and in human favus, and, it may be added, in pityriasis versicolor and in erythrasma. On the other hand, the animal ringworms and animal favus give rise to more or less violent local inflammatory reactions in human beings. In other words, there is a more marked effort of defence which often ends in rapid spontaneous cure. There is also a considerable degree of general immunity reaction, as shown by the fact that fresh areas are seldom involved and that the patient is protected from subsequent attacks.

A noteworthy feature of all these infections is that the invasion of the fungus is confined to the horny cells. It grows only in the horny layers of the epidermis, in the hairs, or in the nails, and does not penetrate into the deeper tissues. The inflammatory reaction which occurs as a result of the invasion, and which represents an effort at defence against this invasion, is brought about, not by the advance of the fungus into the deeper tissues, but by the poisons which it excretes as it grows in the horny layers. Thus it is that we never get lymphatic gland infection nor generalization through the blood stream, however virulent the type of fungus.

Deep-seated Fungous Infections.

Finally I come to the important group of deep-seated fungus infections, which include *Actinomycosis*, *Blastomycosis*, and *Sporotrichosis*. Actinomycosis is a rare disease in this country, and the skin is not often primarily invaded, but it is involved from a more deeply-seated infection. Blastomycosis was first described in America, and has been chiefly met with there. No authentic case has been recorded in this country.

A complete account of sporotrichosis was given at the last annual meeting of the British Medical Association by Dr. de Beurmann, and I shall but briefly recall the main facts. The fungus which causes sporotrichosis is, in culture, very similar to that of many ringworms, and it consists of similar mycelium and fruit organs. But in the human body it behaves very differently from the more superficial infections, Instead of flourishing in the horny tissues, it invades the deeper structures, gaining entrance by a wound in the skin or mucous membrane. It does not there multiply like ringworm in the form of mycelium and mycelial spores, but appears to produce specially resistant spores which are able to live in the deeper tissues. It may gain entrance to the lymphatics and give rise to secondary lesions; and to the blood-stream, and become generalized; and it may even endanger life. It is now known that sporotrichosis may invade not only the skin and mucous membranes and lymphatics, but any organ of the body. Against this invasion the tissues react by fixed cell proliferation, serous exudation and phagocytosis, so that there are formed gummatous swellings recalling those of syphilis and tubercle. It is indeed with these diseases that sporotrichosis has been hitherto confused.

The discovery of sporotrichosis was made by Schenk in America in 1898, and two further cases were reported by Hektoen and Perkins in 1900. It was then forgotten until 1906, when Gougerot in Paris, while making a systematic study of atypical forms of cutaneous tuberculosis, again discovered the sporotrichosis fungus. From this time the disease has been studied by many observers, but most exhaustively by de Beurmann and Gougerot, to whom we owe the greater part of our knowledge of the subject. Over 200 cases have now been reported in France and other Continental countries and America, but in spite of the fact that dermatologists have been on the look-out for the disease in this country, not more than two or three indigenous cases have been recorded.

Three cases have come under my own observation: one was infected in South America, one probably in the United States, and one only in London, and they serve to illustrate the three main types of the disease.

[The author here exhibited lantern slides of these cases. One showed the American type, in which there was infection by a wound on the hand and a secondary chain of gummata along the lymphatics. The second was one of the patient who had at

no time been out of London, and illustrated the type of disseminated gummata. This patient also had sporotrichial synovitis. The third was borrowed from de Beurmann's book, and illustrated a type imitative of lupus verrucosus, of which Dr. Adamson had published an example in a patient who had recently visited the United States. Characteristic cultures of sporotrichosis obtained from these three cases were also shown.]

In regard to the treatment of sporotrichosis, it may be said that the eruptions clear upon the administration of potassium iodide in large doses, a drug which we have long known to be useful in actinomycosis, but the treatment must in some cases be a prolonged one in order to effect a complete cure.

The immediate practical lesson of these new discoveries is that in cases of gummatous lesions in the skin and other organs which do not conform exactly to those of syphilis or of tubercle, we ought to consider the possibility of a fungous infection, and particularly not to be misled into the diagnosis of syphilis because these lesions tend to resolve when potassium iodide is given.

The systematic bacteriological study of cases suspected to be sporotrichosis has led to the further discovery of other nearly related diseases, and it seems probable that the recently acquired knowledge of sporotrichosis is only the beginning of a new chapter in the study of these deep-seated fungous infections.[1]

REFERENCE.

[1] The Present State of the Question of Mycoses, de Beurmann and Gougerot, *La biologie médicale*, 1912.

DISCUSSION.

Sir MALCOLM MORRIS (London), F.R.C.P., urged the importance of the diagnosis of ringworm of the groins, axilla, and toes. The disease was not as common, he believed, as it was a few years ago. He urged patients to submit to strong treatment with chrysarobin, which required complete rest. The pain might be severe but the cure was rapid. Care must be taken to get rid of trace of disease from nails, or relapses were certain.

Dr. R. A. BOLAM (Newcastle-on-Tyne) said that at a meeting of the British Medical Association, where those practising dermatology came closely in contact with their colleagues in general work, it was proper to emphasize the necessity of the investigation and identification of the type of fungus in any particular case under notice. There were direct and immediate benefits in the way of prognosis and treatment, and there was the direct and ultimate benefits in determining the original sources of contagion. Ringworm of the glabrous skin ought eventually to be practically extinguished as being a preventable disease. In regard to the type of reaction of the skin to the common human type of small-spored ringworm, he would record his opinion (based on the results of cultural investigation of a considerable number of cases) that not merely macular lesions of a relatively insignificant type result, but that large and numerous lesions, particularly double or triple ringed lesions, were constantly encountered. These more striking lesions were not so frequently the result of cat infection as was often suggested. Those ringworms of the second type of a more florid and more rapid reaction were especially worthy of careful investigation with a view to isolating the fungus and tracking down the original source of infection. It was frequently possible to determine the animal from which the contagion arose, and to take prompt steps to prevent further spread. The chronicity of infections of the groin type of ringworm could not be too strongly insisted on, and the relatively common involvement of the toes and fingers. An important point was that the toe and finger lesions might persist many years after the groin affection had cleared up. In previous years he had treated as pompholyx cases which on further investigation had proved to be examples of a persistent epidermophyton infection. The great difficulty in the treatment of groin ringworm was that of persuading the patient to submit to lie up for a period so that energetic measures might be taken. If the social difficulties which arose out of the very general impression that it was often a result of cohabitation could be dissipated, and it could be established definitely that contagion readily occurred through clothing and in other ways, much of the reluctance to undergo a thorough course of treatment would doubtless disappear.

Dr. GEORGE PERNET (London) referred to a paper on 130 consecutive cases of ringworm he had published in 1891, and since then he had made various contributions to the subject. He had found that *Microsporon audouini* might give rise to multiple rings apart from animal ringworm. *M. audouini* also gave rise to multiple macular lesions as well as rings, and he agreed with Dr. Bolam on this point. With reference to the epidemic ringworm of the groins which was so prevalent a short while ago, he noted that it was practically limited to the well-to-do and wealthy classes. Some years ago, when working with the late Dr. Radcliffe Crocker, he had examined so-called eczema of the toes for fungus, and found it on several occasions. Sulphur and carbolic acid ointment answered well in these cases, but the socks, slippers, etc., should always be well disinfected or got rid of. With regard to favus corporis, he had observed very crusted, turret-like lesions, and traced the infection to a kitten whose ears were affected. As to Professor Wild's cases, he (Dr. Pernet) had observed such affections in men unpacking Japanese goods, but he had been unable to find a fungus in the vegetable packing material.

Professor R. B. WILD (Manchester) agreed with Sir Malcolm Morris that ringworm of the groin had diminished in this country during the last few years, and attributed it to the discussion at the Royal Society of Medicine. Possibly in some of the cases where mycelial fungi were found they might be saprophytic and evidence of their causal relation with the dermatitis was wanting. With respect to treatment, a combination of sulphur, salicylic acid, and phenol was usually sufficient, but in obstinate cases a combination of salicylic acid and resorcin was effectual, but it was necessary to provide for thorough disinfection of the socks and underclothing, for the chronicity of the disease was often due to reinfection. Ringworm of the animal type might be caused on the arms of workers in straw, such as men engaged in packing, and some of them might be very severe. Favus had a peculiar tendency to recur upon the same site after even several years' interval.

Dr. FRANK BARENDT (Liverpool) emphasized the importance of examining the whole body in cases of local parasitic infections. He had found favus of the body, of which the patient was not cognizant, on glabrous regions, and he did not think it so rare as Dr. Adamson believed. With regard to the treatment of eczema marginatum, he extolled the value of chrysarobin ointment. Its drawbacks should be explained, and a dusting powder of zinc oxide, starch, and talc would mitigate the chysarobin dermatitis, which it should be the object of the physician to produce. This done, a diluted white precipitate ointment with benzoated lard would bring the case to a successful issue. Whilst under treatment soap and water should be excluded, and the region, if necessary, cleansed with warm olive oil.

Dr. A. W. WILLIAMS (Brighton) had a toe ringworm case last year of interest on account of its long duration. The patient, a retired army officer, developed the disease during the Indian Mutiny, and had been troubled without remission ever since. The groin and hands were not affected.

Dr. ALFRED EDDOWES (London) mentioned a case of ringworm caught from a hedgehog. As a useful remedy in the doctor's hand, he recommended a mixture of carbolic acid and rectified spirits. This could be applied at each visit, in order to pick out the worst spots. Of course after this strong application an ointment should be smeared on and used constantly. For nails he strongly advised mercurial plasters, cleaning with ether, and filing down with a corn rubber.

Dr. S. E. DORE (London) asked Dr. Adamson if he could give any idea of the proportion of cases of ringworm of the fingers and toes in which the epidermophyton and trichophyton fungi respectively were present. It was not possible to distinguish the fungi microscopically, and cultures were often extremely difficult to obtain; but

his impression was that trichophyton infection of the toes and fingers was commoner than was generally supposed. Ringworm of the toes was very common and often unsuspected until attention was drawn to it by the occurrence of ringworm of the groin or other part of the body. Those who had had experience of children's out-patient departments in this country could not fail to recognize the frequent association of small-spored ringworm of the body in children with ordinary *Microsporon audouini* of the scalp. As regarded the source of infection by the epidermophyton, the speaker had had a case in a nurse who had contracted at the same time ringworm of the toes and molluscum contagiosum at a Turkish bath.

Dr. F. GARDINER (Edinburgh) pointed out the chronicity of tinea of limbs. He had seen one case lasting ten years. Favus and tinea corporis were sometimes indistinguishable clinically. Two cases he had found diagnosed as tinea, yet cultures showed cat favus. In some cases along with the tinea circinata of the body it was very necessary to treat the hyperidrosis associated. He also mentioned a case simulating sporotrichosis, in which cladosporium was found, and another of circinate dermatitis, in which *Aspergillus niger* was present.

Dr. SEQUEIRA (London) referred to a remarkable case of endothrix ringworm of the glabrous skin, with granulomatous swellings, which he had published. The eruption was of extraordinary chronicity, and the chronicity depended in the main on the difficulty of curing the affection in the nails. The patient, a young man, and his two sisters, had had this eruption for several years. The fungus was the *Trichophyton plicatile*, and this parasite was the common fungus found in Denmark. The patients lived near the river Thames. The girls were engaged in paper sorting, but they were not known to have come in contact with sailors or others trading with Denmark. He also mentioned a recurrent case of ringworm of the fingers, simulating cheiro-pompholyx, but recurring in the winter, in which the source of infection appeared to be a pair of fur-lined gloves. On the patient discarding these gloves the attacks ceased. He referred also to a case of ringworm of the feet and toes, where the infection appeared to be contracted from a pair of slippers worn at a Turkish bath.

VERONAL RASHES; WITH A NOTE ON LUMINAL.

By GEORGE PERNET, M.D.Paris,

Dermatologist to the West London Hospital, and Lecturer on Dermatology, West London Post-Graduate Medical School.

SINCE Wöhler in 1828 first produced urea synthetically, and accidentally[1] apparently, from ammonium cyanate, synthetic chemistry had gone on apace. But it was not till 1904 that the method for manufacturing veronal from urea was published.[2]

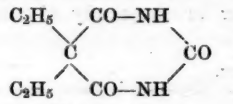
My first case of veronal rash occurred in 1906. The patient was a lady (Casebook E., 419) who had taken veronal for sleeplessness. On May 7th a blotchy rash appeared, but by May 10th it was fading. On the night of May 11th the patient took gr. vijss of veronal, and by 1 a.m. of May 12th the rash was worse. I first saw the patient on May 12th, when there was a diffuse blotchy erythematous eruption mixed up with circinate lesions, showing a tendency to vesiculation in their centres, distributed about the arms, neck, trunk, and legs. In a word, it was an erythema toxicum, which has been no doubt well known to most of us for some time, and so need not delay us further. One point about this case, however, was of some interest, namely, that the eruption was worse on the right arm than on the left, which had recently been affected by a neuritis.

Another case which came under my notice in 1910 (Casebook H., 529) is worth recording here. The patient was also a lady, who had two years previously whilst abroad suffered from an eruption of the face with blistering of the lips, after taking veronal. The roof of the mouth at the time felt hot and dry. She had had another attack of the same kind abroad, again after taking veronal. One month before I saw the patient she had taken malonal, which is only veronal under another name; but she did not know this. The fact is, many synthetic compounds are rechristened from time to time, which is very unfortunate. Industrialism being all-powerful, nothing can be done to prevent this. Other synonyms of veronal are hypnogen, malourea, deba. This by the way.

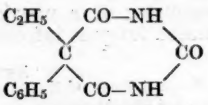
To return to the patient. She took one small tablet of malonal, and five minutes after her mouth began to tingle and the head to feel hot. The eruption then occurred. She described the lesions about the face, lips, and hands as watery blisters, and these were accompanied by general swelling of the head, orbits, and nose. For the first time the chest was also involved, and the remains were still present when I saw her—namely, three or four circular areas with dilated vessels.

Here we had to deal with a severe bullous rash. The question of anaphylaxis at once occurs to one. Warned that malonal was veronal, no doubt the patient has profited by the knowledge, for I have not seen her since. I am sure she would have let me know about any further trouble, for she was an old patient of mine.

Another case I am justified in mentioning in this connexion is one of luminal rash. Luminal is a derivative of veronal, the ethyl group of which has been replaced by a phenyl group, thus—



(Veronal.)



(Luminal.)

The patient in this case was also a lady (Casebook J., 531). A fortnight before I saw her, after taking 3 grains of luminal a day, she developed an erythematous rash, which got practically well. On resuming the luminal the rash recurred, and when I first saw the case the eruption had been present for two days. It was extensively distributed about the neck, trunk, and limbs, slightly affecting the face. In appearance the erythematous rash was morbilliform, and in some areas, especially about the lower part of the back, it was *en nappe*, sheet-like, as a result of coalescence. The palms and soles were not affected. The second attack was much worse than the first. Anaphylaxis again.

At that time luminal was new to me, and I compared in my mind the rash with eruptions I had seen as a result of veronal. In a general way I had come to the conclusion, instinctively, that the phenyl group was one to be feared as a factor.

I may add that I have never prescribed veronal. Nor do I consider it should be used incidentally in skin cases, especially of the bullous type. I have referred to this in another place.[3]

It is not my business to touch on the general effects of veronal in this place, but those who are interested in the matter will find details of its poisonous properties in Kobert's book on toxicology.[4]

REFERENCES.

[1] Remy de Gourmont: *Promenades Philosophiques*, 2ème série, 1908, p. 131. [2] Fischer: *Annalen der Chemie*, 1904, cited by Martindale and Westcott's *Extra-Pharmacopoeia*, fifteenth edition, 1912, p. 778. [3] Pernet: A Case of Pemphigus Vegetans Treated on General Lines and by Means of Vaccines (Boeck Festschrift, *Arch. für Derm. u. Syph.*, Band cx, 1911). [4] Kobert: *Lehrbuch der Intoxicationen*, 1906, vol. ii, pp. 963-4.

DISCUSSION.

Professor R. B. WILD (Manchester) thanked Dr. Pernet for bringing forward these cases, as it was important for them to be recognized in the case of commonly used drugs. The eruptions described as the result of narcotic drugs were all of a vasomotor origin and usually of erythematous type, and the tendency to the eruption appeared to coincide with the narcotic power of the drug. This was shown well in the urethane series, where urethane eruption was rare, veronal commoner and due to a smaller dose, while with luminal in which a phenyl group was introduced the dose which produced an eruption was smaller still.

Dr. ALFRED EDDOWES (London) mentioned a case in which he had seen a herpetic eruption, whose vesicles ultimately coalesced to form bullae, follow on the administration of trional.

DISCUSSION ON THE NATURE, VARIETIES, CAUSES, AND TREATMENT OF LUPUS ERYTHEMATOSUS.

OPENING PAPER.

By J. M. H. MacLeod, M.D., M.R.C.P.,

Physician for Diseases of the Skin, Charing Cross Hospital, and the Victoria Hospital for Children; Lecturer on Skin Diseases, London School of Tropical Medicine.

In introducing a discussion on lupus erythematosus, its nature, varieties, causes and treatment, I am reminded that for more than half a century, ever since M. Cazenave recognized the disease in 1851 and gave it its unfortunate and confusing name, the subject has been one of the favourite themes for discussion at dermatological societies and congresses, but that in spite of this and the vast literature which has accumulated around the subject, the last word on lupus erythematosus has not yet been said, and there are certain problems connected with it which seem as far from elucidation now as they were when Cazenave published his historical paper.

The subject of lupus erythematosus is a wide one, and any of the above headings would have furnished ample matter for a profitable morning's discussion. Consequently it will only be possible for me in the time at my disposal to deal with it in a somewhat general fashion, to give you a brief review of the present state and limitations of our knowledge of the disease, and to suggest various lines of thought and argument which may serve as guides to the subsequent discussion.

I propose to deal with the subject in the following order—namely, the varieties, nature, causation, and the treatment.

I. Varieties.

A.—*Clinical Characteristics.*

The clinical appearances of lupus erythematosus are so familiar that it will be unnecessary for me to describe them in detail, but to refresh your memories I will ask you to look at this series of photographs and drawings, which illustrate the clinical characteristics and main varieties of the disease. Lupus erythematosus is a *multiform affection* with several distinctive types of lesions, between which transitional forms may be met with, which correlate them together. The two chief types are: (*a*) The discoid or circumscribed type, which is chronic in its evolution and course; and (*b*) the acute disseminated type.

(*a*) *Circumscribed Type.*—The circumscribed or discoid variety is the most common type of the disease, forming about 90 per cent. of the cases which have come under my observation at Charing Cross Hospital during the last ten years. It generally affects the butterfly area of the face, but may occur also on the ears, scalp, fingers, and occasionally on the buccal mucosa.

There are several varieties of discoid lesions—namely:

1. A well-defined lesion with a more or less raised border, a rough surface due to a central adherent scale, which, on being raised up, reveals the presence of horny plugs extending down into the follicles.
2. A non-scaly type in which the lesions are raised, pinkish-red in colour, and simulate those of an ordinary toxic erythema, or occasionally suggest lupus vulgaris.
3. An unusual variety characterized by the presence of numerous small telangiectases on the surface of the lesions, and forming about 4 per cent. of the circumscribed cases.

Under the heading of circumscribed lupus erythematosus may be included also the peculiar condition known as "lupus pernio," which forms a connecting link between lupus erythematosus and chilblains. It is met with at the distal extremities of the peripheral circulation—namely, the nose, fingers, and toes, occurs in winter, tends to improve or disappear spontaneously in summer, but may persist indefinitely.

(*b*) *Acute Disseminated Type.*—The acute disseminated type furnishes about 10 per cent. of the cases. In it the lesions develop more rapidly and the area involved is more extensive than in the circumscribed variety. It usually appears first as vivid erythematous patches about the face; these become scaly, spread quickly, and tend to involve considerable areas. It may appear in other situations, such as the neck, chest, back, or limbs, and in severe cases may affect the skin almost universally. The lesions on the face may be so vivid and acute as to suggest a toxic erythema, acute eczema, or even erysipelas. Sometimes they occur as raised erythematous patches, at other times they may be vesicular or even bullous, and in rare instances lesions of the herpes iris type may be met with. It is not uncommon in the acute cases for the mucous membrane of the mouth to be involved.

In some instances the acute dissemination of the disease may supervene on an old-standing circumscribed case, in others the affection may be acute from the onset. The more acute cases are of special interest from the etiological standpoint, as they point to a severe toxaemia, and are not infrequently associated with grave visceral derangements, such as disease of the kidneys or the liver, and more or less marked general symptoms, generally including pains in the joints and a remittent temperature. In some of these cases a fatal issue has taken place in the course of a few weeks from kidney disease, pneumonia, or in a state of profound collapse from some unknown cause.

These acute cases sometimes show a marked tendency to spontaneous remission of the lesions, which are usually followed by slight atrophy and scarring; in rare instances superficial ulceration has been observed in the acute patches.

The two essential clinical features in all the cases, whether they be chronic and discoid, or acute and disseminated, consist of persistent erythema succeeded by atrophic scarring. It is these characteristics which suggested the name "ulerythema" (from οὐλή, a scar) to Unna, and "erythema atrophicans" to Sir Malcolm Morris—names which are both preferable to lupus erythematosus, as they do not suggest a connexion with lupus vulgaris.

B.—*Histological Characteristics.*

The microscopical appearances of sections of lupus erythematosus vary considerably in detail, according to the stage of evolution and type of the lesion examined; but in all the specimens marked changes can be detected both in the corium and in the epidermis, those in the corium being primary and essential, while those in the epidermis are secondary. The earliest changes take place in and around the blood vessels of the subpapillary and papillary layers and in the capillaries around the pilosebaceous follicles and the sweat glands, and consist of dilatation of the vessels, followed by an extravasation of serum, oedema, and a perivascular cellular infiltration composed of small round connective tissue cells, mast cells, and occasional plasma cells. The infiltration is most marked in the upper layers of the corium, but may extend down to the hypoderm, along the sweat ducts and glands. Degeneration of the fibrous elements takes place in the infiltrated areas, the collagen becoming rarefied and the elastin destroyed. In consequence of the oedema and degenerative changes in the fibrous tissue a peculiar condition known as "canalization" is produced, in which the tissue spaces become widely dilated. The overlying epidermis also becomes oedematous, the basal layer blurred or absent, and the interepithelial lymphatics dilated. The stratum corneum is thickened, especially at the mouths of the follicles and the sweat pores, forming horny plugs; but where the underlying oedema is marked, imperfect corification and scaliness result. In older lesions the hyperaemia and oedema are less marked, the capillaries tend to become blocked with cells, the sebaceous glands to disappear, while the cellular infiltration assumes a more formative appearance with the presence of connective tissue cells and new collagen fibres, indicating the occurrence of a cicatrical process. The histological picture, with its comparatively dry horny or scaly surface and its underlying oedema, has been aptly compared by Unna to a bog covered by apparently sound mossy turf, but which if stepped upon proves unsafe.

II. Nature and Causation.

One of the earliest suggestions with regard to the nature of lupus erythematosus was that by Hebra, who christened the affection, six years before Cazenave published his paper, "seborrhoea congestiva," believing that

it had its origin in the sebaceous glands, as he noted as an early characteristic of the lesions the presence of greasy plugs like comedones in the pilo-sebaceous follicles. It was pointed out, however, subsequently that these plugs only occurred in certain types of lesions of the disease, and were not an essential feature, and that instead of consisting of inspissated sebum they were composed of horny material the result of a hyperkeratosis, involving not only the mouths of the follicles, but the intervening epidermis in the affected area. In 1881, at the International Congress of Medicine in London, the nature of the disease was discussed, and the general consensus of opinion was that it was a peculiar type of inflammatory process in which granulation tissue tended to be formed, giving rise eventually to atrophic scarring.

When the tubercle bacillus was discovered by Koch in 1882 it was suggested on various sides that the disease in some way was connected with tuberculosis, and this view has been strongly supported within recent years by French dermatologists.

A.—*The Tuberculous Origin of Lupus Erythematosus.*

The evidence in favour of this view does not seem to me to be convincing. Repeated attempts have been made to demonstrate tubercle bacilli in the lesions of lupus erythematosus, but never with success. Inoculation experiments in susceptible animals have given negative results, and the histological architecture is totally unlike that produced by the reaction of the tissue to the presence of the tubercle bacillus *in situ*. It is asserted, however, by the French school and their supporters that the affection is due to toxins produced by tubercle bacilli situated at a distance from the skin, that it is one of the so-called "toxi-tuberculides" and the result of more or less attenuated tuberculous toxin circulating in the blood.

The following arguments have been advanced in support of this proposition:

1. In a certain number of cases of lupus erythematosus there is a personal evidence of tuberculosis, such as the presence of tuberculous glands, tuberculosis of the lungs or other viscera, or there is a family history of the disease.

In 250 cases collected by Roth, 185 gave evidences of tuberculosis; out of 42 cases of Boeck, 28 were tuberculous; out of 38 reported by Kopp, 18 gave evidences of tuberculosis; and out of 71 recorded by Sequeira and Balean there were personal evidences of tuberculosis in 18, and a definite family history in 31. Against this, however, out of 119 cases collected by Veiel there was a personal evidence of tuberculosis only in 5 per cent. and a family history in 7 per cent.; out of 94 cases exhibited at the Dermatological Society of London there was a record of tuberculosis only in 10 of the patients and a family history only in 2, and in my own experience at Charing Cross Hospital out of 40 consecutive cases only in 6 was there personal evidence of tuberculosis, and in 5 of the 6 cases there was a family history of the disease.

In this connexion it is only fair to concede that in a certain number of cases evidences of tuberculosis may have been missed; on the other hand, in others the diagnosis may have been at fault, and cases of the superficial symmetrical type of lupus vulgaris may have been mistaken for lupus erythematosus.

To reduce the possibility of error in this connexion various tests for tuberculosis have been employed from which somewhat contradictory results have been obtained. In certain cases tuberculin injections have been resorted to. Walther Pick, for instance, injected tuberculin in 29 cases of lupus erythematosus and in only 15 of these a general reaction occurred, and these were all cases in which clinical evidence of tuberculosis had been noted, and only one of these cases reacted locally.

Bunch examined the tuberculo-opsonic index of 10 patients with lupus erythematosus, none of whom showed any personal evidence of tuberculosis, though in 3 of them there was a definite history of it in near relatives, and in 7 of these cases the opsonic index was normal to tubercle.

The von Pirquet and Calmette tests have also been employed, but the results from them were inconclusive.

Agglutination tests have been resorted to by Baris and Dobrovici, who found that the agglutination test for tubercle bacilli was positive in the discoid or fixed type of the disease, and negative in the migratory, suggesting that the former variety was tuberculous.

These findings do not seem to me to prove that either the tubercle bacillus or its toxins are the direct cause of lupus erythematosus, and considering the prevalence of tuberculosis in some form or other, and the comparative rarity of lupus erythematosus in association with it, the connexion between the two might reasonably be regarded as a casual coincidence. On the other hand, it seems equally reasonable to assume that it may be a predisposing factor.

2. The clinical appearances of the lesions of lupus erythematosus may so closely resemble those of lupus vulgaris as to render the differential diagnosis difficult or impossible. This argument has been advanced from time to time in support of the tuberculous theory of the origin of the disease, but it does not bear close scrutiny, for even although lesions may resemble each other clinically they may be due to totally different causes. The type of lupus vulgaris with which it is most liable to be confused is that superficial variety described by Leloir as "lupus érythématoïde," but the history and the tendency to ulceration in the case of lupus vulgaris, and a microscopical examination if necessary, will usually serve to make the diagnosis certain. The same argument might be advanced in connexion with erythema multiforme and certain late superficial syphilides, for in both of these lesions sometimes occur which so closely resemble lupus erythematosus as to present difficulties in diagnosis to the most careful observer.

3. Another argument which has been put forward in this connexion is that lupus erythematosus may occur in association with lesions of the tuberculide type, such as the papulo-necrotic tuberculides, lichen scrofulosorum, and erythema induratum of Bazin. This association, however, is exceptional and simply corroborates the fact that lupus erythematosus may occasionally occur in tuberculous subjects. Recent observations on the "tuberculides" tend to disprove the view that they are due to toxins eliminated by tubercle bacilli in some diseased focus at a distance from the skin, and point to the presence of the bacilli in the skin, and the bacilli have actually been found *in situ* in the papulo-necrotic tuberculides and positive inoculation experiments on susceptible animals have been done in connexion with erythema induratum. In the case of lupus erythematosus, on the other hand, no one has yet succeeded in demonstrating tubercle bacilli in the skin.

In this connexion it may also be pointed out that, in spite of the innumerable injections of the different tuberculins and vaccines which have been given for diagnostic and curative purposes, there is no record of any having produced lupus erythematosus, though there are several instances recorded in which an eruption of lichen scrofulosorum has followed tuberculin injections.

B.—*Other Toxins as the Cause of Lupus Erythematosus and its Relation to the Toxic Erythemata.*

Apart from the tuberculous toxin, there are certain facts connected with lupus erythematosus which strongly suggest that in certain cases, especially of the acute disseminated type, it is the result of some toxin at present unknown circulating in the blood vessels of the affected area.

Of these the most important are the following:

(*a*) Symmetrical distribution of the lesions. The tendency to symmetry in the distribution of the lesions is a noticeable feature of the disease in cases not only of the circumscribed but also of the acute disseminated type. This seems to point to the action of some poison circulating in the blood.

(*b*) Sometimes the lesions of lupus erythematosus resemble those of the toxic erythemata. This resemblance has frequently been noted, and so close may it be both in regard to the type and distribution of the lesions that a distinction between them may be practically impossible. In some cases of erythema multiforme of the so-called erythema perstans type the lesions may persist for months, and be clinically indistinguishable from the non-scaly type of lupus erythematosus, while in the acute disseminated cases the similarity to erythema multiforme may be so close as to make the differential diagnosis a matter of opinion rather than of certainty.

But not only may these affections resemble one another clinically, but they may do so also in their histology. In erythema multiforme the microscopical appearances show

an acute inflammatory disturbance suggesting the action of a toxin reaching the skin by the blood vessels, while in lupus erythematosus there is an inflammatory disorder of a similar type which goes on to degeneration and obliteration of the blood capillaries. The histology of the two affections points to a difference in degree rather than in kind. In the case of erythema multiforme it suggests the action of a virulent toxin on a healthy tissue, and in lupus erythematosus of a less virulent toxin acting for a longer period in a situation where the circulation is feeble from anatomical or other reasons, causing a chronic inflammatory disturbance followed by imperfect repair and atrophy.

(*c*) Lupus erythematosus of the acute disseminated type has from time to time been found to occur in association with more or less severe general toxaemia connected with disease of the kidneys, cirrhosis of the liver, alcoholism, etc.

Numerous instances are on record where it was associated with nephritis. Four cases in which nephritis was present occur in the records of the Dermatological Society of London. Short described a fatal case with nephritis in which there was marked cloudy swelling and small haemorrhages in the kidneys. In an acute case reported by me in a young woman death took place in three months after the disease appeared with acute nephritis.

A case in which the acute disseminated type was associated with disease of the liver was recorded by Galloway and myself in a woman in which a scar leaving erythema was present symmetrically distributed on the face and extremitiss. The liver was considerably enlarged, and the patient was a chronic alcoholic.

C.—*Association with Circulatory Disturbances.*

The coexistence of lupus erythematosus with defects of the circulation has been observed so often that it would appear to be more than a mere coincidence, and suggests a causal connexion between them. In women it is not infrequently associated with cold hands and feet, a mottled, cyanosed condition of the skin of the extremities, moist palms and soles, a tendency to chilblains, and other evidences of a weak peripheral circulation. Other more serious circulatory anomalies have been observed in connexion with it, such as swelling of the ears and tip of the nose, cyanosis of the cheeks, a profusion of telangiectases, dead fingers, and even more definite Raynaud's phenomena. Lesions due to the combined action of cold and a defective circulation, such as chilblains, may sometimes become persistent, superficially ulcerated, lead to scarring, and be practically indistinguishable from lupus erythematosus. This view is further strengthened by the general occurrence of the disease in situations where from anatomical reasons the circulation is liable to be impeded from the skin being tightly stretched over bones and cartilage, as on the nose, malar prominences, auricles, and scalp.

Conclusions.

In brief, it seems to me that lupus erythematosus can no longer be regarded as a morbid entity due to one specific cause, and that there is not sufficient proof that it is a tuberculous affection, or that where it occurs in tuberculous subjects that it is directly caused by the tuberculous toxin. It would seem to be a persistent erythema, followed by atrophy and scarring, due to a variety of causes in a predisposed individual. The circumscribed cases have probably a different etiology from those of the acute disseminated type, and even different circumscribed cases clinically closely resembling each other may vary in their causation.

The causes, both predisposing and direct, may be thus summarized:

1. *Predisposing Causes.*

(*a*) *Age.*—It is essentially a disease of adult life, the usual age of incidence being between 20 and 40 years, though it has occasionally been known to begin in childhood and even in old age.

(*b*) *Sex.*—It is more common in females than in males, in about the proportion of 3 to 1.

(*c*) *Type of Skin.*—The discoid type seems to be more frequent in individuals with fair skins than in those whose complexions are dark, and a greasy skin with large active sebaceous glands seems to be a predisposing factor.

(*d*) A defective peripheral circulation, due to a weak state of health, anaemia, heart disease, etc.

(*e*) General morbid conditions, such as tuberculosis, rheumatism, etc.

(*f*) A feeble state of the blood vessels, either hereditary or acquired, and due partly to their anatomical situation.

2. *Direct Causes.*

(*a*) Toxins circulating in the blood and reaching the skin; these may be produced in the alimentary tract, or may be the result of a disordered state of some internal organ, such as the kidneys or the liver.

(*b*) Local causes, of which the most common are cold, sudden changes from heat to cold, frostbite, occasionally sunburn, burns from heat, traumatism, bites from mosquitos or other insects, and some local septic condition, such as a boil or an ulcer.

In conclusion, it is dependent on a delicacy or state of weakness of the part affected, in which the circulation is so depressed and feeble that local injury, or the presence of toxins in the cutaneous blood vessels, cause so profound and lasting a disturbance that recovery from it without loss of tissue is impossible.

Treatment.

The disease is one of the most capricious and intractable of skin disorders. Sometimes it shows a marked tendency to heal spontaneously, and at other times it may disappear in a few weeks or months, apparently as the result of some form of treatment, local or general. On the other hand, it may persist indefinitely, or after a period of improvement may show a marked tendency to relapse, either as the result of some general disturbance or from local irritation, or the injudicious use of irritating remedies. By suitable treatment improvement and even cure may be effected. The treatment varies according to the type of case, and not infrequently the failure to benefit the condition is the result of the injudicious choice of the remedy employed. In the circumscribed cases the treatment is chiefly local, while in the acute disseminated type local treatment is comparatively of small importance in comparison with the treatment of the patient behind the disease, and the more or less severe visceral disturbance or toxaemia with which it may be associated. Care must be taken that the prolonged treatment of a local type does not result in irritative changes and the production of epithelioma on the diseased patch—a misfortune which has in several instances been recorded. Cases of the generalized type have been known to clear up under general treatment where practically no local measures were employed. In most cases, however, the best results have been obtained by a judicious combination of both.

General Treatment.

The general treatment is based largely on general medical principles, and absolute reliance cannot be placed on any kind of specific form of medication. In many of the cases there is evidence of a lowered vitality associated with a weak peripheral circulation, or there may be signs of hereditary or acquired disease, disturbances of the alimentary tract, anaemia, or disorders of the heart, kidneys, or other important organs. Such defects must be carefully sought for and dealt with by appropriate means. In connexion with the dietary it is important that anything which tends to cause flushing of the face—such as hot drinks, condiments, alcohol, etc.—should be omitted. All sources of local irritation should also be guarded against, such as brilliant sunshine, extremes of temperature, cold winds, and direct heat.

In the acute disseminated cases it is generally essential to confine the patient to bed, and, since the local condition appears to be due to a general toxaemia, the obvious indication is to eliminate or neutralize the toxins responsible for it. As the exact nature of the toxins is generally unknown, various drugs have been employed which are reputed to have an antitoxic action, such as salicin, quinine, and ichthyol, and certain others in a more or less empirical manner, such as iodine and arsenic. Of these, salicin in doses of from 15 to 30 grains t.d.s., or large doses of quinine, have given the best results. Salicin acts not only on the toxin, but, being a cardiac depressant, it reduces the hyperaemia of the skin, and the action of quinine can be intensified by painting the lesion simultaneously with tincture of iodine.

Local Treatment.

The long list of local remedies which have been from time to time recommended for the treatment of this disease is in itself an indication that their employment has been based on empiricism rather than on a knowledge of the causation of the disease. In the choice of any form of local treatment it is important to remember that lupus erythematosus is much more easily aggravated than cured by local applications. Before selecting any form of treatment the exact type of lesion must be carefully studied, and an appropriate remedy chosen. In every case it is advisable to commence the local treatment in a tentative fashion, and to gradually increase the strength of the application according to the toleration of the individual.

There are three indications which serve as a guide to the local treatment—namely, (1) the removal of the scales; (2) the drying of the lesion, and (3) the reduction of the hyperaemia.

For the removal of the scales an effective method is to scrub the lesions with soap spirit lotion on a piece of wet flannel. Where the scales are thick and adherent the application of a 2 or 3 per cent. salicylic ointment or plaster may be necessary.

With the object of drying the lesions bland powders, such as zinc pastes, or lotions containing an insoluble deposit, may be employed. A useful powder consists of equal parts of zinc oxide and magnesium carbonate, the latter absorbing a larger quantity of moisture for its bulk than any other powder. Of the lotions, the well-known calamin-zinc lotion is generally useful, and of the pastes the ordinary zinc paste of Lassar. Where the lesions are active the scales should be removed daily by soap spirit followed by the application of calamin lotion; where they are more resistent and chronic, salicylic ointment should be applied at night, and the lotion or paste in the morning.

For the purpose of reducing the hyperaemia ichthyol has gained a reputation from its power of diminishing local congestion. It may be employed in aqueous solution, in ointment form, or incorporated in zinc starch paste or as a plaster. Adrenalin solution (1 in 1,000) has also been recommended for this purpose, but its action is transient. A simple and mechanical method of reducing the hyperaemia is to paint the lesions several times a day with contractile collodion, containing 1 per cent. of salycilic acid to destroy the scales.

At one time a favourite mode of treating the lesions was by applying caustic remedies, such as silver nitrate, acid nitrate of mercury, corrosive sublimate, etc., but although these were capable of removing the disease they were apt to produce an unsightly scar and could only be recommended in small scaly chronic patches. Of the milder caustics, pyrogallic acid 6 per cent. applied daily in a paste, or a 10 per cent. resorcin lotion dissolved in spirit and painted on the lesions once a week, sometimes gives good results.

In the case of minute lesions operative measures such as electrolysis, the actual cautery, and multiple scarification may be employed with benefit by skilled hands.

In addition to the above methods of treatment various physical methods have been used with more or less success, such as ionization, refrigeration, Finsen light, radium, etc.

Ionization with zinc sulphate is, in my experience, one of the most useful and reliable of these methods. A 2 per cent. solution of zinc sulphate is employed, and a current of 2 to 5 milliampères passed for about fifteen minutes a sitting; after the ionization a bland protective paste is applied to the part.

Refrigeration with solid carbon dioxide sometimes gives good results, but is uncertain and occasionally aggravates the disease. It should on no account be employed where the lesions are actually spreading, but should be reserved for chronic circumscribed lesions of the seborrhoeic type. The applications should be short in duration, from five to ten seconds with medium pressure, and anything in the way of a severe reaction avoided.

Finsen light occasionally gives beneficial results, especially in old-standing lesions covered with thick adherent scales, but is harmful where the patches are recent and active.

The *x* rays, in my experience, have given disappointing results; in small doses they stimulate the skin and seem to irritate the lesions, and in large doses are liable to cause a permanent dilatation of the vessels and to replace the patch of lupus erythematosus with a telangiectatic scar.

Radium has also been employed, but with doubtful success, and although theoretically it is known to have a selective action on the blood capillaries, causing them to disintegrate and to become replaced by new fibrous tissue, I have not succeeded in obtaining this result practically.

Various electrical methods have also been used, such as high frequency, static discharges, etc., but these are of comparatively little value and liable to irritate rather than improve the condition.

DISCUSSION.

Sir MALCOLM MORRIS (London) said that the true cause of lupus erythematosus was still unknown, and this in spite of all the work done by a large number of workers, He divided the cases into two groups: (1) General toxaemic; (2) local. The former, like erythema multiformes, was due in many cases to some intestinal lesion or other internal disease. It occurred in delicate people with chilblain circulation. The local variety might be due to exposure to sun, cold wind, bites of insects, etc. The treatment in the first group consisted in careful attention to the general health, with gentle local treatment only. The local cases were benefited by the application of iodine, CO_2, and radium.

Professor R. B. WILD (Manchester) said: I have gone through my hospital case-books for the past twenty years, and found that in 30,000 cases there occurred 161 cases of lupus erythematosus, of which 19 could be traced as re-admissions, leaving 142 individual patients; this gives a percentage of 0.47, as compared with 0.63 per cent. given by Dr. Radcliffe Crocker for his hospital cases in London. It may be of interest to compare this figure with the number of cases of lupus vulgaris—namely, 1.5 per cent. — and to all forms of skin tuberculosis, which aggregated 2 per cent.; also to the syphilitic cases, 4 per cent. Of the 142 patients, 94 were females (66.2 per cent.) and 48 males (33.8 per cent.); the average age of the females was, when first seen, 34.7, and of the males 31.5. The youngest patient was a boy of 8 and the oldest a man of 66; the youngest female was 15 and the oldest 63. In private practice the proportion of lupus erythematosus cases is much larger. Dr. Crocker had a percentage of 1.8. I have found in the last ten years exactly 2 per cent. among my private cases, and of these 80 per cent. were females and 20 per cent. males; the average age was distinctly higher than among hospital patients—namely, 38 for females and 37 for males, the youngest a girl of 14 and the oldest a woman of 64. It would appear that the disease attacks the poorer class of patients at an earlier age than it does those in better circumstances, as the latter apply for treatment sooner than the former owing to the disfigurement produced, and the disease is usually much less advanced when first seen in a private case than it is in a hospital case.

The distribution of the lesions is of some interest, and I have investigated this in a number of cases, especially in view of the textbook insistence upon the "butterfly-patch" distribution of the disease. This is, I think, unduly emphasized, and often prevents a diagnosis being made at an early stage, when small lesions appear on other parts. It is worth noting that in all cases I have seen the disease never began on any covered part of the body; the face is, of course, the most common site, but the scalp and the ears are not infrequently the first to be affected. Apart from the head and face, the fingers are the only parts where it has started, and here only as the lupus pernio. As regards the distribution, when first seen 71, that is, 50 per cent., affected both cheeks, and mostly the nose as well; in only about half of these was the disease so symmetrical as to produce the characteristic "butterfly patch." In the others one side was distinctly more affected than the other. In 24 cases the nose and one cheek only were affected, and in 9 the nose alone. In 4 cases there was only a single patch on one cheek. In 5 it affected the nose and ears. Adding these figures, we have 113 cases out of 142—that is, 79.5 per cent., in which some part of the middle third of the face was involved.

The ears were affected in 45 cases—in 27 both ears, in 9 the right, and in 9 the left only; in 2 cases the disease was entirely confined to the ears, in 5 to the ears and nose, in 2 to the ears and scalp, in 1 to the ears, scalp, and forehead. In the asymmetrical cases there is no appreciable difference between the right and left sides.

The scalp was affected in 43 cases; in 9 of these the lesions were entirely confined to the scalp, though very extensive in 3 of these. Cases of lupus erythematosus confined to the scalp seem to be not infrequently missed in private practice when they are still small and the hair fairly thick. In 11 cases the eyelids were affected, in 5 both, in 3 the right and 3 the left, in 1 the left eyelid was the only affected part. The forehead was affected in 13 cases; in 2 of these the forehead alone was involved. The chin was affected in 4 cases, and the mouth and mucous membrane of the lips in 2. I have also had 2 cases in private practice in which the lips and mucous membranes were affected.

Lesions on the rest of the body are rare; the hands and fingers were affected in 9 cases, the chest in 2, the neck in 4, the arms in 2, while 4 cases developed an acute disseminated eruption with high temperature and symptoms of septic intoxication; one of these died and another recovered from two successive attacks at an interval of two years.

Apart from these hospital cases, I have seen 3 other cases of acute disseminated lupus erythematosus, 2 of which were fatal; 1 case of lupus erythematosus affecting the ears and fingers for several years, beginning as a lupus pernio, died from thrombosis of the iliac vessels, first the right and afterwards the left, with extension upwards.

Of the 3 deaths from acute disseminated lupus erythematosus I was able to obtain a *post-mortem* examination in 2; 1 showed tuberculous ulcerations of the intestines, the other ulcerations of the small intestine, extensive in area, but not tuberculous; in addition, there was noted a recent acute extension of an old tuberculous focus in the lung. The examinations were made by the pathologist of the Manchester Royal Infirmary.

I propose to summarize briefly the conclusion I have provisionally formed from the study of these cases, and in doing so I am fully convinced that at the present time we can only come to provisional conclusions; much more information is needed before we can hope to solve the mystery of what is, I think, one of the most interesting forms of disease.

To take briefly the headings under which this discussion is defined: (1) *The nature* of the disease: I agree entirely with Dr. MacLeod that it is not a definite entity, but a process resulting in destruction of the proper tissues and their replacement by scar tissue; practically what in other organs we should call a cirrhosis—that is, an interstitial inflammation more or less chronic, ending in cicatrization. (2) *Causes and varieties*: We must, I think, separate the acute disseminated form from the others, and in these cases alone can I accept the toxaemic hypothesis. Toxaemia must, to my mind, connote some general symptoms, and I cannot admit any general toxaemic condition as a factor in a disease which in over 97 per cent. of the cases remains a strictly local disease, and in a considerable proportion of these an asymmetrical local disease for periods extending up to twenty or more years. Moreover, are we any nearer to a solution of the problem by assuming an unknown toxic substance as the cause of the disease? I think it is better to admit that the cause is unknown in the majority of cases, but that it is a local cause, and one which acts upon exposed parts of the body, whether it be by microbic, chemical, or physical irritation. Some cases—and especially those in younger patients—I believe to be due to tuberculous infection, and look upon them as representing the maximum of protective reaction on the part of the tissues; we find in the lungs, for example, cases of fibroid phthisis which were long believed to be non-tuberculous, and I consider that in this group of cases of lupus erythematosus a local infection is completely cured by interstitial reaction even before the typical architecture of a tubercle is formed. In favour of this view is the fact that in my cases of lupus erythematosus under 25, a large proportion showed tuberculous lesions in glands or scars of former abscesses, and were frequently members of tuberculous families. In the patients where the disease began after 25 the proportion with tuberculous lesions or history was much smaller. Another point I should like to mention in this connexion is that in two of these youthful cases of lupus erythematosus which I have had the opportunity of watching at intervals for several years, the nodules of lupus vulgaris have appeared, and the whole clinical picture become one of lupus vulgaris. The second variety is that which is especially associated with chronic venous and capillary congestion, and this includes the venous congestion and lividity of chilblains, and also the slight forms of Raynaud's disease, on both of which conditions lupus erythematosus may develop. These patients are, I think, usually weakly in other ways, or overworked and often overstrained. The third variety is the one specially associated with the overaction and plugging of the sebaceous glands, the lesions are usually thick and well defined; seborrhoeic lesions are usually found in association with this form, and the patients are often very healthy and strong. Finally, we have the acute disseminated form, which is, I admit, a toxaemia, possibly due to absorption from any septic focus, possibly a tuberculous focus in some cases; and the lesion may be as widely spread and symmetrical as an exanthem or a drug rash, all of which I should class as true toxaemias.

As regards treatment, we should admit that the disease is only curable when seen, as it rarely is, in the very early stages. If once cicatrization has taken place we cannot restore the lost tissues, and a scar must remain. Unfortunately we often have to wait for atrophy to take place before making a definite diagnosis of lupus erythematosus. This being the case, I think our first point is not to cause a worse scar by overactive treatment than the disease itself will produce if not treated at all. In all early cases soothing and astringent lotions are the best, combined with mild antiseptics, such as modifications of Bulkeley's lotion. Ointments are, in my experience, more likely to do harm than good except in the sebaceous cases, and where the skin is often greasy. In more advanced cases I have extensively tried all the methods available, and find that judicious scarification, liquefied carbolic acid, light applications of carbonic acid snow, and, where the lesion is small enough, radium sittings give better results than stronger caustics, *x* rays, or Finsen light and its modifications. I have seen several cases where an acute extension has rapidly occurred after strong ointments, carbonic acid snow, and other irritant applications.

Internally I know of no specific, but treat the general health without regard to the local disease. I think an acid and quinine or cinchona mixture is often useful, but it is also frequently useless; the same applies to salicin, arsenic, ichthyol, and ergot. In the acute disseminated cases I think I have found distinct benefit from the red iodide of mercury, $\frac{1}{80}$ to $\frac{1}{40}$ of a grain dissolved in water with 3 to 5 grains potassium iodide, and given every four hours; certainly the cases in which I have given this have recovered, whereas the earlier cases died, but the numbers are too few to draw any conclusions except that it is worthy of a trial in a possibly fatal condition where we know no better treatment.

Dr. R. A. BOLAM (Newcastle-on-Tyne) said the matter of causation still remained the most interesting question. On investigating the figures of his clinic he found there were cases aggregating roughly 30 per cent. which were clinically suspicious of tuberculosis. It was not often possible to prove the suspicion, but the statement was made for what it was worth. The multiplicity of causes would be conceded by most observers. Next in frequency to tuberculous, rheumatic or rheumatoid cases provided the greatest number of instances of the disease. Exposure as a factor had been emphasized by Sir Malcolm Morris, and in this relationship it was interesting to note that experience in the North of England showed roughly three times greater incidence that in the statistics of Crocker. They must all be impressed by the factor of health degradation in the causation. Those affected were often people who had suffered privation and mental stress. In regard to treatment he was in accord with the opener of the discussion, and would only remark that the diversity of results of treatment with CO_2 snow arose in part from lack of preparation of the surface of the only lesions suitable for this remedy—that is, the circumscribed seborrhoeic type. But treatment on general lines, fresh air, super-

alimentation, rest, and relief from mental anxiety still provided the most satisfactory means of combating the disease.

Dr. WINKELRIED WILLIAMS (Brighton) spoke of the tendency of lupus erythematosus to graft itself on pre-existing disease, especially diseases to which the term "seborrhoeic" was applied. He referred to cases of seborrhoeic dermatitis in which it followed, as syphilides sometimes did, in the wake of the seborrhoeic affection; and to cases of rosacea which at first were unmistakably rosacea and later on equally unmistakable lupus erythematosus, and added that he thought such cases should be a warning against the early use of strong local remedies in cases of rosacea. He considered the toxin as most frequently alimentary, and that there was a possible danger in attempting to get rid of this by powerful hydrogogue purges—that is, of suddenly liberating a large quantity of toxins fixed in hard faecal masses—and described a case in which a severe case of lupus erythematosus was suddenly made into the grave "*d'emblée*" type by such treatment; in fact it was like the reaction of lupus vulgaris to a strong dose of tuberculin.

Dr. HALDIN DAVIS said: We are all agreed that lupus erythematosus is one of the most mysterious of all the common lesions of the skin, and it cannot yet be said that we understand it at all completely. It is highly probable that this mystery will continue until a scientific diagnosis is found for the disease. At the moment we are driven to take refuge in the blessed word "toxaemia," a word which is really a confession of ignorance. I quite agree with Dr. MacLeod on the etiology of the disease. Driven as we are to diagnose it on purely clinical considerations, we class under one head almost all cases of persistent erythema which lack induration. I feel convinced that, as our knowledge of the causes of disease advances, we shall be able to separate off from one another some of the types which are now all classed together as chronic forms of the eruption. There are certainly two distinct varieties which are very distinct clinically, and which bear scarcely any resemblance to one another. One of these is the very superficial isolated patch in which the border is not very sharply outlined, and which is found upon the cheek or on the side of the nose in the female out-patient; the other is a much rarer form, of which I have only seen two well-marked cases, in which the lobules of both ears and the adjoining area of the cheeks were quite symmetrically affected. The lesion had a distinctly raised and almost infiltrated edge, while the central parts of the patches were rough, with very adherent scales. The infiltration of the edge naturally suggested a syphilide, but in both cases the Wassermann reaction was negative. Apart from the immediate neighbourhood of the ears, the face was quite free from any other manifestation. The only points in which this rare form agreed with the commoner superficial form were in the presence of scales and in the fact that scarring gradually appeared in the central portions of the lesion. One of my cases was in a middle-aged woman, and the other in a middle-aged man. The woman has been as yet the more fortunate, because she had an attack of erysipelas of the face, and this was followed by an almost complete disappearance of the lupus erythematosus—a good example of the *vis medicatrix naturae*. The man is still under treatment, of which the principal factor is a salicylic acid ointment, in order to remove the scales. Gradual scarring of the lesion is taking place. The prognosis in lupus erythematosus is always interesting and difficult. I am inclined to think that in the more acute cases, where large areas are almost simultaneously affected and where there is little scaling, the prognosis is better than in the more insidious varieties. Certainly in 2 cases I have seen the lesions disappear within a few months under the influence of quinine and salicin and rest in bed as far as possible. Of the more chronic cases I am inclined to think that one is often too pessimistic about the prognosis. Only a small minority of the patients exhibit the typical extensive and classical butterfly appearance, and a single well-defined patch will often remain stationary, even if it does not disappear, for many years. On the other hand, I have notes of at least 4 cases in which chronic patches have been quite cured within a few months, whether thanks to the treatment they have received, or for some other reason, I know not. The evidence that they were really lupus erythematosus and not something else is that they have left a certain amount of the pale atrophic scarring which is accepted as typical. One of these cases was in a little girl of 9 years of age which is the youngest case of this disease that I have met with. Even in the typical and well-marked cases of the butterfly type the prognosis is by no means hopeless. One case in particular I remember, a soldier who had been invalided out of the army and disallowed a pension on account of bad lupus erythematosus which had been considered syphilitic, no doubt on account of the fact that the scarring produced was much deeper than is usual. He gave a negative Wassermann reaction, and after a few treatments with zinc ionization all the erythema disappeared leaving the scarring alone. Some mysterious change must have taken place because not only did the patches treated improve but also all the other lesions. It is interesting to note that we succeeded in convincing a Medical Board appointed by the War Office that this man did suffer from lupus erythematosus and not syphilis, for they ultimately awarded him a pension of a shilling a day. In treating these very chronic cases we have lately been using at St. Bartholomew's the method recommended by Sabouraud in his clinical lectures, of multiple puncture with the galvanic cautery. Under the influence of this treatment a man who has had the disease for many years and who has, it seems, tried all the hospitals, both general and special, of the metropolis, now shows very marked signs of improvement. This method of multiple galvano-puncture, which is well known in France, certainly deserves more attention than it has received in this country.

Dr. GEORGE PERNET (London) considered the acute case brought forward by Dr. W. Williams came into the category of the acute lupus erythematosus d'emblée which the speaker had described. The swelling of the face was certainly like the so-called erysipelas perstans of Kaposi. Dr. Pernet was of opinion that what they labelled lupus erythematosus was not tuberculous in a direct sense. He insisted that tuberculosis might be one of the etiological factors. In the majority of cases there was a family history of phthisis. Chilblains, again, so often present in these cases, was also in favour of this view. Brocq in France was rather inclined to take the English view of the non-tuberculous origin of lupus erythematosus. The teeth and the condition of the mouth were of great importance in the etiology. The name was a wide label including a number of varieties. The factors at work were various, in his opinion, and might lead to a variety of clinical cutaneous manifestations. A syphilide might be mistaken for lupus erythematosus, and vice versa. In his thesis on acute lupus erythematosus d'emblée Dr. Pernet had gone into the differential diagnosis of this condition and erythema multiforme. There was a rare form of the condition known as "psoriasiform lupus erythematosus" resembling in some ways a mixed psoriasis and lupus erythematosus, but the psoriasiform elements presented points of difference as compared with true psoriasis. As to treatment Dr. Pernet, following in Dr. Radcliffe Crocker's footsteps, had obtained very good results in some varieties with salicin and quinine, which latter was very useful, especially in the acute *d'emblée* cases. Locally, phenol, ionization, and CO_2 snow were valuable. Dr. Pernet was eclectic in their use.

Dr. ALFRED EDDOWES (London) said the serious extent and depth of the pathological changes had not been realized by dermatologists owing to their custom of taking sections too superficially for microscopic examinations. By excision deeply for microscopic investigation he had not only learnt much, but unexpectedly cured large nodules. Moreover, he had seen a lesion which had been accidentally crushed cause great swelling and pain, as if a poison had been set free, and finally clear up rapidly without scarring. He believed the primary lesion was essentially deep, like a nodular gumma, and that the damaged area finally produced discoid lesions, just as serpiginous dermato-syphilide succeeded to oedema and the deep gumma. He therefore strongly advocated the puncture, disinfection, and drainage of all nodules

discovered; and he practised the plan of puncturing each nodule to its base by means of a lancet, at an angle of 45 degrees, in order to prevent or minimize scarring. He had had encouraging results from the application of radium, but had not arrived at any definite conclusions as to dosage. He did not believe in any one drug, but in the treatment of ill health on general principles.

Dr. Semon (London) was unable to agree that the case against a tuberculous etiology was in any way proven. He desired to call his hearers' attention to the very important paper just published in the current number (July) of *Archiv für Dermatologie und Syphilis*, by Bloch and Fuchs. These investigators had succeeded in producing tuberculosis in guinea-pigs by inoculating pieces of fresh lupus erythematosus eruptions (from 4 cases) into the peritoneal cavity. More recently they had proved that these lesions contained tuberculous toxins. Their method was to cut up and triturate in a sterile mortar pieces of freshly excised lupus erythematosus lesions with 8 to 10 c.cm. of water. After evaporating this to 0.5 c.cm. an opalescent yellowish fluid remained, one drop of which was sufficient to produce tuberculoid papular lesions when injected into tuberculo-susceptible patients. Further, these lesions reacted locally on subsequent tuberculin injections as minimal as $\frac{1}{10000}$ mg., thus supporting their tuberculous nature. Gougerot of Paris had also succeeded before these investigators in producing tuberculosis in guinea-pigs from typical scalp lesions (microscopically examined) of lupus erythematosus. Although there might be various etiological possibilities and probabilities in the production of these lesions, the tubercle bacillus had been adequately proved to play an important productive part in some at least of them.

Dr. G. Norman Meachen (London) put in a plea for the discontinuance of the term "lupus" erythematosus by dermatologists. It was much better to employ Unna's synonym of "ulerythema," which was an excellent pathological name with the great advantage of not frightening the patient. With regard to the application of carbolic acid mentioned by several speakers, he thought that better results were obtained by mixing anhydrous phenol with powdered camphor. This mixture, known as "pheno-camph.," did not whiten the skin, and it was less painful than ordinary carbolic acid.

Dr. Frank N. Barendt (Liverpool) regarded the term "lupus erythematosus" used by observers to include more than one type of disease. The history of the phrase showed this. Where the ulcerative process was the prominent feature, the tuberculous nature of the process impressed itself. Again, where vascular disturbance—angiospasm—in its various phases was present the erythematous idea became predominant. It was probable this condition rendered the tissues more susceptible to the insemination of the tubercle bacilli, and thus one got a composite clinical picture. With respect to treatment in all cases, a fortifying regimen was indicated. Where more active local treatment was required he used electrolysis with a negative needle, and zinc ions in the form of a zinc needle attached to the positive electrode. But in all cases the aphorism of "*Surtout ne pas nuire*" should be borne in mind.

The President remarked that in a rather prolonged study of this disease he had found the difficulty of determining its cause an increasing one. He could not help thinking that there was one underlying cause of lupus erythematosus, doubtless acting in conjunction with many other factors. The one point he would like to insist on was that one occasionally met with cases in which there had been a long-standing chronic patch or patches of the discoid type, and on which suddenly an acute outbreak of the erythematous type had occurred, and these formed a bridge between the definite discoid and the distinct erythematous types. He had been much interested in Dr. Winkelried Williams's acute case, apparently of intestinal origin, for he had had a case of this type which was ultimately fatal in a young previously healthy girl. She had extraordinary pyretic attacks (temperature 103–104°) following the administration of aperients. There were offensive motions, but the bacteriologists were unable to give him any assistance.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

ANGINA PECTORIS AND CHLOROFORM.

In the course of the last few weeks two deaths from angina pectoris have received comment in the public press, and in both cases chloroform appears to have been employed in the alleviation of pain during the seizure. I do not know anything about these particular cases, and therefore my remarks upon the administration of this drug are not intended to apply to them, but I wish to call attention to the fact that there is a class of cases of angina pectoris in which the administration of chloroform is attended by considerable risk.

An opinion is prevalent in the profession that during the anginal seizure the arteries are in a state of vaso-constriction, that peripheral resistance is increased and blood pressure is raised, consequently that the employment of a drug which causes rapid vaso-dilatation in the splanchnic region is indicated. This opinion receives apparent confirmation from the action of nitro-glycerine in alleviating pain in the anginal seizure, but it must be remembered that nitro-glycerine relieves spasm in involuntary muscle in whatsoever organ or part it is situated, and no proof whatsoever exists that the relief which this drug affords in angina pectoris is obtained through reduction of arterial spasm.

The prevailing opinion—namely, that the visceral circulation is impeded by vaso-constriction during the anginal seizure, and therefore that the heart is under strain from increased peripheral resistance—finds no sanction from the results of modern methods of examination. In fact, evidence points in the opposite direction.

A series of blood-pressure readings taken by me during the seizure show, in many instances, neither an elevation nor decline. In a few cases I have found blood pressure raised, but in these the elevation was not high, nor were the attacks severe. On several occasions I have found blood pressure lowered, falling 20 to 30 mm. Hg below the standard regarded as normal in the individual case.

To the last class of cases I now wish to draw particular attention. A fall in blood pressure such as this must mean vaso-dilated splanchnic vessels. The clinical aspects of the cases support this view. Persons so affected appear to be in a state of shock; the pulse is stringy and soft, hard or compressible, frequent or slow. The venous system, so far as surface veins indicate its state, is drained of blood. Veins on the dorsum of the hands lie in furrows at a plane beneath the surface. The arterial system is in no better state. The skin is pallid, cold, and covered with sweat. From the shortage of blood in peripheral veins and arteries, it may be affirmed that the main volume of the stream is lying inert in splanchnic lacunae.

In cases belonging to this class pain appears in its severest type, and in these cases internal remedies fail on account of lack of absorptive power on the part of the gastric wall. Hence the inducement is strong to seek a remedy which may be administered through inhalation. But in the case of subjects belonging to this class, administration of chloroform is attended by considerable danger.

London, S.W. H. Walter Verdon.

An international meeting on thalassotherapy will be held at Cannes in April, 1914, under the honorary presidency of His Serene Highness the Prince of Monaco. The actual president will be Professor d'Arsonval and the vice-president Dr. Faisans, physician to the Beaujon Hospital, Paris. The proceedings will have reference exclusively to the study of marine heliotherapy. The following is the programme of reports and discussions: The nature of solar radiations at sea level and the means of measuring them; actinometry and climatology in their relations with marine heliotherapy; physiological action of marine heliotherapy on nutrition; dosage of marine heliotherapy; marine heliotherapy in surgical and cutaneous tuberculosis, in pleuro-pulmonary tuberculosis, and tuberculous disease of the mediastinal glands, in abdominal tuberculosis and in non-tuberculous affections. Full information as to the organization of the meeting will be published later by the committee responsible for the arrangements.

Reviews.

DERMATOLOGY.

In his recent book on the bio-chemistry of the skin[1] Professor Unna has compressed a vast quantity of work into quite a small volume. It is founded principally but not exclusively upon the work which has been done during the past few years by Professor Unna himself and his pupils. The bio-chemistry of the skin is a subject of the greatest complexity and interest, which is yet for the most part shrouded in the deepest obscurity; but there is one, not unimportant, section which we are able to study with some facility—that is, the processes of oxidation and reduction which are continually taking place, and it is entirely to this branch of the subject that Professor Unna has devoted himself. The reason for this limitation is that the oxidizing and reducing capacities of the cell are its only chemical properties which at the present time can be investigated minutely by microchemical methods. The procedures of ordinary chemistry are much too gross for these delicate investigations. The book is divided into three portions; the first is devoted to the consideration of those elements of the skin in which oxygen is to be found, either free or in sufficient quantity to saturate the tissue; the second to the reducing properties of the tissue elements of the skin; the third part, much shorter, deals with the chemistry of the surface of the skin; a short note on the bearing of these investigations on dermatological therapeutics is appended. The chief reagent whereby the presence of oxygen is detected in the tissues is "rongalite white." This is a solution of one part of methylene blue and two parts of rongalite (a condensation product of formalin with the sodium salt of sulphoxylic acid), which are warmed in the presence of some hydrochloric acid until the colour disappears. In the presence of oxygen the blue colour returns. It appears that the elements richest in oxygen are mast cells, nuclei and, especially under pathological conditions, leucocytes. Very interesting are the researches recounted here upon the pigments of the skin. It has been shown that the normal pigment of the skin is produced by the action of a ferment upon tyrosin, but that the ferment differs in different species of animals. Miss Florence Durham has shown that tyrosin digested for twenty-four hours with pieces of skin from animals of varying colours in each case gave rise to a product agreeing in colour with the animal from which the piece of skin was taken. The normal skin pigment has no relation to melanin. The elements of the skin in which the reducing powers are most marked, or, in other words, which are most hungry for oxygen, are first of all the horny layer and the root sheath of the hairs, and next to them come the muscles and nerves of the skin, and the spongioplasm of the connective tissue cells. One interesting point which results from the investigation of the horny layer is that, contrary to former beliefs, there is no more sulphur in the horny layer than in other non-horny proteins. There is, however, a considerable quantity of sulphur in the hair. In both cases the sulphur is found in a compound known as cystin (diaminodithiolactylic acid). The essential chemical process in the production of horny cells is an extrusion of certain amino acids from the interior of the cell, accompanied by a partial digestion of the cell leaving its insoluble constituents behind. This book is not easy to read, for it deals with a subject which needs a good knowledge both of histology and of advanced organic chemistry for its proper comprehension, but it is well worth the trouble necessary; and there is no doubt that in order to make progress in our understanding of the mechanism of cellular processes much work will have to be done upon the lines here indicated. The book should be read not only by dermatologists but by physiologists also.

Grundriss der Dermatologie[2] is a German translation of Darier's well-known textbook (published 1909). It partakes of the nature of a collaboration between two leaders of the French and German schools of dermatology, for Jadassohn of Berne annoted and brought it up to date. In his preface the German professor disclaims all intention of criticizing his French colleague, and it must be admitted that his "italicized" and bracketed addenda, which were submitted for Darier's approval, are never contradictory or polemical. On the other hand, it is a new departure, and very interesting, to see the opinions of two great European authorities with an unsurpassed experience of diseases of the skin, chronicled side by by side in the text, and their mere juxtaposition should aid the student and post-graduate, for whom Darier designed the book, to understand the pathology, etiology, therapy, and prognosis of the diseases discussed. Although a translation the book is most readable and interesting, and it may be confidently recommended to all advanced students and teachers with a moderate knowledge of German. Long discussions and wearying references, so common in German works, are entirely avoided, and only the most useful and salient pathological and histological features are considered. Much of the French genius for word-picture must necessarily disappear in any translation, but Dr. Zwick has succeeded in retaining the Gallic style to no inconsiderable extent. The plan of classification adopted exactly follows the French original; it is based on the morphological characters of the lesions, and this, while our knowledge of the etiology of skin diseases remains so lamentably incomplete, is still the best possible. Particularly deserving of commendation is the chapter on the modern treatment of syphilis, in which Jadassohn shortly reviews the latest opinions and results, both with salvarsan and neo-salvarsan.

The book on *Skin Diseases in General Practice*[3] which Dr. Haldin Davis has written will be found useful as a work of reference. The illustrations are clear and typical, and the notes on treatment particularly good. The author is, we believe, the first English writer to adopt the topographical method for dermatology. This procedure entails much unavoidable recapitulation, and notably swells the size of the volume; but, so long as its limitations are kept in mind, mistakes in diagnosis resulting from too close an adherence to the topographical principle should be uncommon. The chapter on the face contains some useful hints on the much neglected and abused subject of cosmetics, whilst the modern applications of electricity, radium, x rays, and CO_2 snow fill an interesting section at the end of the book.

CHEMICAL REFERENCE BOOKS.

The fourth volume of *Thorpe's Dictionary of Applied Chemistry*[4] contains the section from Oilstones to Soda nitre, and, like the earlier volumes, comprises monographs on a large number of subjects by distinguished authorities. The drugs dealt with in this volume include opium, rhubarb, saccharin, salicylic acid and its derivatives, and many of less importance, as well as the groups oleo-resins and resins; articles of food and drink include pepper, peas, potatoes, plums, rice, sago, rum, and many others. Among other subjects of interest to the medical profession may be noted radium and radio-activity, purins, proteins, phenol and its homologues, sewage, and smoke and smoke-prevention. Petroleum is the subject of an article of forty pages by Sir Boverton Redwood (including a section on American petroleum by Dr. S. P. Sadtler), in which a world-wide survey of the production, purification, and testing of the material is given, together with some information on its utilization for many purposes. The articles on photography and photo-mechanical processes, occupying thirty-five pages, include a short historical survey, and every part of the processes of making and reproducing photographs is discussed concisely and in a very informing manner; the various colour processes are described in sufficient detail to be readily understood. The amount of

[1] *Biochemie des Haut.* Von Professor P. G. Unna. Jena: Gustav Fischer. 1913. (Roy. 8vo. pp. 113. Mk.3.)

[2] *Grundriss der Dermatologie.* Von J. Darier. Translated into German from Darier's *Précis de Dermatologie* by K. G. Zwick, with Annotations and Addenda by Professor Dr. J. Jadassohn, Berne. Berlin: Julius Springer. 1913. (Roy. 8vo, pp. 543; 122 figs. 22s.)

[3] *Skin Diseases in General Practice.* By Haldin Davis, M.B., B.Ch., B.A.Oxon., F.R.C.S.Eng., M.R.C.P. Oxford Medical Publications. London: Henry Frowde, and Hodder and Stoughton. 1913. (Demy 8vo, pp. 352; figs. 67. 15s. net.)

[4] *A Dictionary of Applied Chemistry.* By Sir Edward Thorpe, C.B., LL.D., F.R.S., assisted by eminent contributors. Revised and enlarged edition, in five volumes. Vol. iv. London: Longmans, Green, and Co. 1913. (Med. 8vo, pp. 735. £2 5s. net.)

new matter in this edition is shown by the fact that the section included in the present volume of 727 pages occupied only 368 pages in the previous edition; this is partly due to the extension of existing monographs which has been necessary in revising them and bringing them up to date, and partly to the addition of many new monographs.

The fourth edition of *Allen's Commercial Organic Analysis*,[5] which has been appearing volume by volume in the last two or three years, is in many respects a new work. The production of the whole has been entrusted to three editors, two American and one English, and these gentlemen have secured for each volume the collaboration of various other chemists who have made a special study of the subjects dealt with therein. The result is an encyclopaedic work by some fifty chemists, in which a vast amount of special information is given, but which differs widely from the original work by the late Mr. A. H. Allen. Probably the increase in the amount of material available necessitated some such change, but, valuable as the present edition is, the difference is not entirely in its favour. The tendency is to give too much information, instead of only such as is naturally looked for under the title "commercial analysis," and one misses sometimes the practical character which marked the original work, and showed the hand of the practising analyst. Volume VII of the book is the latest to appear; this corresponds to Part III of Volume III of the previous edition, and deals with some vegetable alkaloids left over from Volume VI, with glucosides, non-glucosidal bitter principles such as aloin, animal bases, ptomaines, animal acids, lactic acid, and cyanogen and its derivatives; it is the work of four American and three English chemists. A large proportion of the substances treated of are therefore among those used in medicine—the alkaloids of colchicum, ergot, ipecacuanha, jaborandi, and physostigma are dealt with, while among non-alkaloidal bodies the glucosides of digitalis, the aloins, piperazine, urea, creatine, lactic acid, and the cyanides may be mentioned. It is somewhat surprising that in twenty-four pages devoted to lactic acid there is not a single reference to the Bulgarian sour milk which has proved during recent years such a useful adjunct to treatment in many cases. Four and a half pages are given to the estimation of urea, and the section commences with the remark that "the estimation of the urea contained in urine is often of great physiological and pathological interest"; but the only methods described are one by precipitation as oxalate, intended to be applied to blood or extracts of tissues; another by conversion into ammonia (Kjeldahl's method), with precautions to prevent other nitrogenous substances present in urine from being also converted; and a third by conversion to ammonia in an autoclave. But surely it would have been proper to have made some reference to the method of decomposing the urea and measuring the nitrogen, which is commonly employed in practical urine testing, and is sufficiently accurate to give valuable comparative results. It is hardly necessary to say, however, that these criticisms are not intended to detract from the great value and usefulness of this comprehensive work.

VETERINARY PHYSIOLOGY.

MAJOR-GENERAL F. SMITH, in *A Manual of Veterinary Physiology*,[6] has fulfilled an interesting task by accomplishing what he imposed upon himself, a work essentially a veterinary physiology; but his statement that it is not a comparative physiology arouses dissent. In the nature of things, physiology must be a comparative science, as its conclusions are based upon evidence drawn from various branches of animal life. The veterinary aspect is maintained in this work largely by valuable remarks on clinical and pathological matters bearing upon the domestic animals. But the observations are extended also to man upon occasion. The work is intended for students as well as practitioners, but much that swells the pages of most textbooks on physiology has been eliminated, while the essentials have been collected without excessive detail. The design has been to teach, rather than the cultivation of induction and deduction.

One of the first questions of a tiro might well be, "What is physiology?" and it would be of advantage to find his query anticipated in an introduction unfolding the scope of the science. Such an introduction might include a description of the cell, the cell being the foundation of biology. Cytology seems to offer a master key by means of which an entrance may be effected into the domain of the physiology of the structures composed of cell aggregates. In the work before us there is some account of the cell on page 698. This account is not prolix, but the phraseology is not always exact: "As the cells die or are worn out, their places are taken by others, and this process is occurring from the moment the egg is impregnated." Surely the cell does not die or become worn out from the moment of impregnation of the ovum. The following (p. 698) also requires reconstruction: "Within this minute speck of material *is* contained all the elements of life," etc., so as to read, "all the elements of life are contained within this minute speck." The remainder of this sentence should be converted into a new one. It is not possible to agree "that a knowledge of the cell is intimately connected with the nature of life" (p. 701), though such knowledge must be intimately connected with a knowledge of the nature of life. It is commonly the case that the word "excreta" is misused as of the singular number; but it is more rare to find "ingesta" similarly ill treated, as on p. 223; minor faults of this kind occur frequently—see p. 63, for "occur" instead of "occurs"; p. 60, "cause" for "clause." On p. 84 nerves "flow" out. On p. 694, line 8 from top, "is" should be "becomes." Again (p. 702, line 12 from bottom), "In the present light of knowledge" should read "In the light of present knowledge." These selections have been made to indicate a line of revision; for modes of expression should be carefully adjusted; their educational value in the training of students should not be overlooked. But, apart from these defects, the work under review may be recommended as supplying a need.

NOTES ON BOOKS.

IN an interesting manual on *Nervous Breakdowns and How to Avoid Them*,[7] written, we presume, for the benefit of the otherwise intelligent lay person, Dr. MUSGROVE has, with a plentitude of apt similes and illustrations, given in plain language an account of the protean symptoms of the elusive but very real disease now termed "neurasthenia." Quite rightly he draws a rigid distinction between this and the other psycho-neuroses, hysteria and hypochondriasis. Neurasthenia is a lonely malady, and the sufferer neither expects nor receives much sympathy. He would, indeed, welcome the dawning of the day when the ubiquitous microbe can be held responsible for his woes, for then at least he could depend upon a modicum of interest at the hands of the pathologist! There is much to be said for the suggestion that the secrets of health should be taught in all elementary schools. Only now in a casual kind of way is some regard for the priceless heritage of a sound body being inculcated into the minds of the rising generation, after the three R's have for many years done their deadly work. The chapters on health and diet contain many sensible if not necessarily original suggestions, and the author's remarks on that modern bugbear—worry—should give the modern business man much to ponder over. Obviously one of the dangers of a book of this kind in the hands of the laity is that by reason of the very generalization the subject demands it may foster introspection in the victims of the malady it discusses. There is a note of hope in the book, however, and if the time of prevention has gone past the remedy lies at every man's hand if he will but listen to the voice of reason in the shaping of his course of life.

THE Commission appointed some time ago by the Russian Government to study the question of the reorganization of the sanitary services of the Empire has presented its report. It recommends the establishment of a ministry of public health.

[5] *Allen's Commercial Organic Analysis.* Vol. vii. Edited by W. A. Davis, B.Sc., A.C.G.I., and Samuel S. Sadtler, S.B. Fourth edition. London: J. and A. Churchill. 1913. (Roy. 8vo, pp. 572; figs. 28. 21s. net.)

[6] *A Manual of Veterinary Physiology.* By Major-General F. Smith, C.B., C.M.G. Fourth edition. London: Baillière, Tindall, and Cox. 1912. (Demy 8vo, pp. 820; 1 plate; 260 figures.)

[7] *Nervous Breakdowns and How to Avoid them.* By Charles D. Musgrove, M.D. Bristol: J. W. Arrowsmith, Ltd. London: Simpkin, Marshall, Hamilton, Kent, and Co., Ltd. 1913. (Crown 8vo, pp. 196; 2s. 6d. net.)

ANNUAL CONFERENCE ON CONSUMPTION.

The fifth annual conference of the National Association for the Prevention of Consumption was opened by the Prime Minister at the Central Hall, Westminster, on Monday, August 4th. Lord Balfour of Burleigh presided.

The Premier's Speech.

The Prime Minister, who was interrupted several times by suffragettes, after some introductory remarks said that the loss of life caused by tuberculosis was appalling. He was told by the Local Government Board that out of every ten deaths from all causes one was due to this disease, and the loss was greatest in the working years of life. Between the ages of 20 and 45, one out of every three deaths from all causes was due to pulmonary tuberculosis. As might be expected, the death-rate was highest in London and the other large towns, but it was sufficiently serious and sufficiently severe throughout the country. In the ten years, from 1871 to 1880, the average annual deaths in England and Wales from all forms of tuberculosis numbered about 70,000. In 1911, two years ago, they had fallen to 53,000. Allowing for the increase of population, the number of deaths in 1911 would, had the death-rate from 1871 to 1880 been continued, have been about 103,000. Fifty thousand lives were, therefore, saved in the course of a single year. What were the causes of the decline, and how far might they look forward to seeing it progressively increase in the future? They would all agree that among them were the improvement in social conditions, particularly housing; improved habits among the population at large as regards cleanliness; and, last but by no means least, the gradually increased use of institutions for the treatment of the sick. It was significant that in 1911 in London over half the male deaths, and in England and Wales over one-third, of the total deaths from tuberculosis occurred in institutions for the sick. Something considerable, therefore, had been done to check the ravages of this terrible scourge. But there were other reasons for expecting even greater progress in the near future. First and foremost they could count upon the steady and continuous improvement in sanitation, and on the provision of decent and sanitary dwellings. Next, they should not lose sight of the powerful aid of direct action by sanitary authorities which had been rendered possible by the compulsory notification of cases of tuberculosis. The Local Government Board pursued a policy of what some people might think slow but steady advance, with the result that since February of this year the notification of all forms of tuberculosis had become compulsory. Further, they must recognize gratefully the action of a considerable number among the more enlightened of the sanitary authorities in the campaign against tuberculosis both in regard to prevention and treatment. Lastly, there was the sanatorium benefit under the National Insurance Act and the provision of a capital sum of a million and a half for the erection of sanatoriums for the entire community. These were very hopeful features. If a really successful campaign was to be waged against this perhaps the most formidable physical enemy of the human race in Western Europe, it must be due to the co-operation and co-ordination of science, philanthropy, and the Government. He wished them not only on behalf of the Government, but on behalf of the whole community, an enlightened and free discussion of the great topics they were met to consider with the confident hope that the result of their deliberations must be to strike another and perhaps a more effective blow than had ever yet been struck against this scourge. He therefore had great pleasure in welcoming them here to London and in declaring the proceedings of the Conference open.

Lord Balfour of Burleigh thanked the Prime Minister, and said he was sure it would be gratifying to all there to know that, encouraged and aided by the Prime Minister, they had secured that the next meeting of the International Congress on that subject should take place in London.

Tuberculin Treatment.

The morning and afternoon sessions on August 4th were devoted to a discussion on tuberculin treatment. It was opened by Dr. H. W. G. Mackenzie, who said tuberculin had been of the greatest possible value in the diagnosis of tubercle in cattle, but was of much more limited usefulness as a diagnostic agent in man. The main objection to its use as a help to diagnosis was that tuberculous infection was so common that the test did not help to distinguish between active and arrested or healed disease. He strongly deprecated its indiscriminate use as an ordinary means of diagnosis. Discussing its use as a curative agent, he believed that a negative answer would have to be given to the questions whether any one had shown that tuberculous guinea-pigs could be cured by injection or that tuberculin could cure the tuberculous ulcer arising from the primary inoculation. Before considering the effects of tuberculin it should be remembered that a very large proportion of the human race became infected at some period of life with tuberculosis, and of those infected a large proportion recovered spontaneously without treatment. Natural resistance might, however, be broken down by prolonged fatigue, exhaustion, intemperance, poor living, anaemia, the debilitating effects of fever, and by various other means. The aim of the physician was to assist Nature by bringing about a cure, and he endeavoured to remove those causes which had lowered the natural resistance. The effects of good food, pure air, rest, and exercise judiciously graduated, and general healthy environment were now universally recognized. No one could reasonably maintain that there was in tuberculin a direct cure for tuberculosis. The most that could be claimed for it was that it called into being or stimulated to activity the antagonistic forces inherent in the body for combating tuberculous infections. Provided that a particular mode of treatment of tuberculosis was not absolutely harmful, one could by careful selection of cases show wonderfully good results. Even where no selection of cases was made it was common experience that the general tendency of cases coming under medical treatment of any kind was towards improvement. But every one who used tuberculin used it in selected cases. If a patient were febrile the case was put down as one of a mixed infection and unsuitable for tuberculin. Most of the cases that did get well appeared to be cases that would be selected as likely to do well under favourable conditions of hygiene and care. There was no absolutely convincing proof that tuberculin treatment by itself would arrest or cure or improve a larger number of cases than would have been arrested or cured without the treatment. Until such proof was available an open mind should be preserved. Tuberculin as a remedy, if it were one, was on a far lower plane than such remedies as quinine, antitoxin, or thyroid extract, for malaria, diphtheria, and myxoedema. Tuberculin treatment was still on its trial. So far its results were not brilliant or convincing. Vaccine treatment as a whole was on its trial, and if staphylococcus infections were excepted, no more could be said for vaccines than for tuberculin. They heard of cures made in private practice. He wanted to see these reproduced in hospital patients.

The Use and Abuse of Tuberculin.

Professor Sims Woodhead summed up his conclusions as follows:

Under proper conditions the exhibition of tuberculin exerts a favourable influence on the course of tuberculous disease, and stimulates beneficial reaction of the tissues.

Up to the present tuberculin has never conferred complete immunity to tuberculosis, either in man or in animals.

Relative immunity may be produced by the injection of small doses, and the only safe method of administering tuberculin treatment is to avoid all but minimal reactions. Otherwise it may do more harm than good.

Ill success has followed all attempts to treat patients or to immunize with antitoxic serums drawn from animals "immunized" by injections of exotoxins and endotoxins of the tubercle bacillus, because these are unable to immunize against the living tubercle bacillus. Tuberculin contains, besides exotoxins and endotoxins, certain of the proteid elements of the tubercle bacillus. The fact that tuberculin produces effects closely similar to those produced by the living tubercle bacillus renders it at once a powerful ally when rightly used and a dangerous enemy when misused.

There are two great difficulties in the way of the general use of tuberculin treatment:

1. The difficulty of making sure that the diseased tissue is completely isolated.
2. The danger of over-stimulation of the tissues.

And three main considerations to be decided when we are doubtful as to whether we should use tuberculin:

1. Are the tissues well nourished and the functions well maintained?
2. Are bacilli already present and accessible in sufficient numbers to provoke therapeutic reaction of the organism?
3. Is it safe to induce any lytic action on these bacilli in the present condition of the patient?

Dr. LYDIA RABINOWITSCH-KEMPNER (Berlin), after reviewing the work that had been done by others and herself, said that it seemed desirable that as the result of various observations she suspected further that tubercle bacilli might be caused to enter the blood stream not only by the injection of tuberculin, but also by the use of chemiotherapeutic preparations; it appeared that the most diverse irritants acting on the tuberculous organism favoured the entrance of bacilli into the circulation. In this direction an extensive field for research was presented for scientific activity. Brilliant cures under the mask of science were announced to the public in the fashion of the advertiser. The new method was always infinitely superior to all other methods of tuberculosis treatment. The evil results were charitably veiled. The dead could no longer speak. She hoped the recently uttered words of Theobald Smith would receive full consideration:

> The medical profession should see to it that vaccine therapy does not degenerate into inconsiderate and reckless experiments on human beings, that it does not create false hopes in hosts of patients, and that it does not originate and end in commercialism, and the desire to exploit the weak and unfortunate.

Professor SAHLI (Berne) said diagnostic injections were dangerous. Tuberculin treatment was chiefly valuable in incipient cases. In advanced cases tuberculin treatment might sometimes produce a certain symptomatic effect, but this did not compare with the utility of tuberculin in incipient cases. All localized tuberculosis was suitable for tuberculin treatment, provided the patient was too seriously ill. As a rule, acute cases could not be treated by tuberculin.

Dr. NATHAN RAW (Liverpool) said that after treating over 1,000 patients with injections of tuberculin he was convinced that it was a remedy of the greatest value, especially in early cases and where the deposit of tubercle was localized, as in one apex of a lung or in a lymph gland or single joint, but where the tuberculosis was disseminated and complicated by secondary infections the use of tuberculin could not be expected to be of much avail. It ought, however, to be tried in every case with the hope of some relief or possible benefit. Tuberculin was not going to revolutionize the treatment of tuberculosis. It was a valuable aid to other methods. The best treatment they could offer to-day to a person infected with tuberculosis was a prolonged open-air life, preferably in a well conducted sanatorium, excess of nutritious food, gentle exercise followed by plenty of rest, and a course of tuberculin by a careful physician.

Dr. WILLIAM CHARLES WHITE, Associate Professor of Medicine, University of Pittsburg, after discussing the subject in considerable detail, summed up his conclusions in the following *confessio fidei*:

> I can only say that I believe fully in tuberculin as an aid to treatment in tuberculous cases. Nay, more, I believe it is the only specific treatment we possess, and the most valuable aid to hygienic measures in our hands to-day. The doubters will ask me for my proof. Statistical studies are of little value on this question; we are so prone to bias in the choice of our cases, so apt to put down to tuberculin improvement due to other measures used at the same time, that very few are willing to accept them. I can only say that I, myself a subject of tuberculosis, have for seven years taken tuberculin in some form or dose at least every two weeks, probably in all over five hundred doses. It has done me no harm that I am conscious of. On the other hand, I have been sure that it has done me great good when I have taken enough at one time to produce in my body a mild reaction. In small doses I have never been able to notice the slightest influence. I have now watched many cases who have taken tuberculin steadily for periods varying from two to five years—cases of tuberculosis of the eye, of bones, of glands, of skin and throat—and I am sure again that the improvement in many of them was due to tuberculin and to tuberculin mainly. I must say, however, that the last dregs of the disease are always very hard to remove, and there is probably some other factor which we have not yet learnt which must be added to tuberculin before we have a real specific for this disease.

Dr. HALLIDAY SUTHERLAND (London) advocated the injection of tuberculin into the children of tuberculous parents. So long as a patient could respond to the ten thousand-millionth of a cubic centimetre of polyvalent tuberculin there was a chance of usefully extending the treatment.

Dr. NOEL D. BARDSWELL (Medical Superintendent, King Edward VII Sanatorium, Midhurst) said that during the nineteen months from October, 1911, to May, 1913, tuberculin was given in the sanatorium to 154 patients, this number representing 62 per cent. of all the patients treated in the sanatorium during this period. Of these 154 patients, 130, or 84.4 per cent., had tubercle bacilli in their sputum, the remaining 24 patients had not. They might then be classified as follows:

1. Cases in which pulmonary tuberculosis was believed to exist, though the presence of tubercle bacilli could not be demonstrated in the sputum ...		24	
2. Definite cases of pulmonary tuberculosis, tubercle bacilli being present in the sputum.			
(*a*) Cases of early disease	(Group I)	22	
(*b*) Cases of moderately advanced disease	(Group II)	81	130
(*c*) Cases of advanced disease ...	(Group III)	27	
		154	

The twenty-four patients in whom tubercle bacilli were not found all did very well, but it was difficult to decide how best to classify them on their discharge. To record them as on admission presenting early disease, and on discharge arrested disease, would give the encouraging result of something like 100 per cent. of complete recoveries. Such a record, however, would be of no value. These so-called early cases did very well under ordinary sanatorium treatment, it being very unusual for such cases to fail to make an apparently complete recovery. The after-history records of King Edward VII Sanatorium showed also that it was unusual for such patients to relapse after receiving a course of sanatorium treatment and education. All that could be said was that such cases did equally well on sanatorium treatment with tuberculin and on sanatorium treatment alone. In 130 cases in the sputum of which tubercle bacilli were found the results were as follows:

Much improved.—64.6 per cent.
Improved.—17.7 per cent.
Stationary or worse.—17.7 per cent.
Lost bacilli.—32.3 per cent.

It should, however, be borne in mind that these figures referred to the treatment of selected cases; for the actual proportion of tuberculin-treated cases amounted to but 62 per cent. of all the cases treated in the sanatorium during the period under review. There was no doubt that if the 30 to 40 per cent. of less favourable cases were eliminated from their records of results of sanatorium treatment alone, the figures would be most materially improved. Comparing the results of tuberculin-treated patients and patients treated in the sanatorium without tuberculin, he said it was impossible to give anything like a final opinion as to the value of tuberculin, on the strength of their present experience. Tuberculin for diagnostic purposes, therefore, had a definite though somewhat restricted value. But he thought it was impossible not to look upon tuberculin sympathetically, for as a means of treatment it at least rested upon a scientific basis.

Sir JAMES K. FOWLER said the following were some of the conclusions at which he had arrived:

(i) The use of tuberculin in any form in the treatment of pulmonary tuberculosis is not free from danger. Even with exceedingly small initial doses which are gradually increased, the limit of tolerance may be suddenly reached and a reaction may occur.

(ii) Its use is absolutely inadmissible in any case in which there is fever.

(iii) Fever is, as I have always taught, the guide to the activity of the disease; therefore the rôle of any remedial agent which can only be employed in afebrile cases is necessarily very limited.

(iv) General reactions should be avoided. If one occurs the treatment should at once cease. To continue tuberculin injections with increasing doses in spite of reactions is unjustifiable and dangerous to the life of the patient.

(v) Focal reactions are also dangerous, as they cannot be controlled. They may occur in the neighbourhood of obsolete lesions, such as it is the object of all treatment to produce. I have reported a case in which, under treatment with old tuberculin, a patient expectorated four calcareous particles, one of which was surrounded by pigmented lung tissue, and also a small portion of lung tissue. Subsequently signs of excavation appeared at the apex of one lung. Calcareous particles are "sleeping dogs" which should not be disturbed.

(vi) The treatment likely to be attended by the best results should follow the lines of rest and exercise originated by Dr. Otto Walther at Nordrach, and further developed by Dr. Marcus Paterson at the Frimley Sanatorium of the Brompton Hospital.

Dr. CLIVE RIVIERE read a paper on the use of tuberculin in the tuberculosis of childhood. In strictly localized tuberculosis of children sensitiveness to tuberculin was low, but in cases such as hip disease, where some auto-inoculation occurred, it might be as high as in phthisis. They should, therefore, begin with a lower dose in these cases than in those where nutrition was good and the disease was strictly localized. For the latter an initial dose of 0.05 c.mm. ($\frac{1}{2000}$ mg.) of tuberculin T.R. might usually be given with safety to a child of 12 years, and doses in similar proportion by weight to younger children. As a rule such doses would have to be increased till the optimum was discovered, when the same quantity should be repeated every two or three weeks so long as it remained active. As healing proceeded it generally became necessary to increase the dose still further from time to time so that its effect should be maintained. For cases with more widespead disease and fever a lower initial dose was indicated, perhaps one-tenth, or even less, of that recommended above, and treatment must proceed with caution. The method covered nearly all cases occurring in early childhood, for disease other than localized was generally of too acute a course for tuberculin to benefit, and even such cases as joint tuberculosis, where fever was commonly present, did well or best on tuberculin given by the small-infrequent-dose method. In older children above the age of 7 or 8 cases of chronic phthisis appeared, and became more and more common as the age of puberty was neared; the large-frequent-dose method used for such cases in adults was also suitable in childhood. It should not, however, be used for cases with fever and rapid course, but reserved for cases of chronic disease where a timely stimulus might rouse the mechanism of defence. It was at the present time often used where it should not be, often given with total disregard to the needs of the case and the action of the remedy, and given, moreover, with far too little appreciation of its dangers and contraindications.

Professor EDM. BERANECK (Neuchatel) read a paper in which he said that, even rationally applied, the tuberculins had a limited curative power. Only those cases were susceptible of improvement whose defences, under the specific stimulating action of tuberculin, were still in a position to subdue the tubercle bacillus—to neutralize its toxins, and to cicatrize the lesions which the bacillus had produced. Unfortunately they had no means of saying whether a course of tuberculin would be therapeutically successful even in relative degree. Generally speaking, the less effectively an organism defended itself against bacillary infection the less also would be the success with which the use of tuberculin was followed. This treatment was not justifiable in those forms of tuberculosis of rapid evolution which, at the onset, caused a profound lowering of the general system and rapid invasion of the organs. It was the same with those cases of tubercle which, after a more or less prolonged resistance, had exhausted their defensive resources and were almost at the point of death.

Dr. E. RIST (Paris) discussed the range of application of tuberculin. The class of patients which seemed fit for tuberculin treatment included a majority of cases with torpid, mild lesions, as well as the so-called incipient cases. No doubt a great number of them did well under tuberculin. But the difficulty lay in deciding whether they did well because they had the benefit of specific treatment, or simply because their lesions had a spontaneous tendency to heal. He had never seen a patient doing well under tuberculin without remaining in doubt whether he would not have done as well without tuberculin. Nor had he met with cases where the influence of tuberculin was so strikingly favourable that he could feel justified in letting them abandon the classical treatment and rely on tuberculin alone. And yet he still gave tuberculin to some patients because a few of them decidedly derived a subjective benefit from it. They declared that, under tuberculin, they felt better, stronger, and, on the whole, improved. It might be due to some disintoxicating influence, or simply to suggestion. So far, immunization against tuberculin only had proved a failure.

Dr. O. AMREIN (Arosa, Switzerland) gave his personal experiences with tuberculin, combined with the climatic treatment at Arosa. In 1910 Bernstein gave statistics of lasting results he had obtained at Arosa, based on 1,050 patients, and they found at that time that 65 per cent. of patients in all three stages treated only by climatic and hygienic methods at Arosa still showed a lasting result after one to nine years (Stage 1, 86.48 per cent.). He only gave tuberculin in those cases where the climatic-hygienic treatment did not act sufficiently, and with such cases, combining the high-altitude treatment with tuberculin, they could still claim 62.06 per cent. *positive results.* Tuberculin would never do the work alone and could not be a panacea, but combined with other methods of treatment, and given in a careful and conscientious way, it had proved itself to be a most valuable preparation.

Conversazione.

In the evening a conversazione in connexion with the annual meeting of the National Association for the Prevention of Consumption was held, at which Dr. ROLLIER (Leysin) gave a very interesting cinematograph demonstration on the cure of surgical tuberculosis by direct sunlight.

Co-ordination of Antituberculosis Measures.

On Tuesday, August 5th, Sir R. W. PHILIP (Edinburgh) delivered an introductory address on the need for co-ordination of antituberculosis measures. He said that every case of tuberculosis—even if the manifestations seemed for the moment trivial—had the potential of risk in a variety of ways. The tuberculosis dispensary emerged from the disappointment and dissatisfaction produced by the existing machinery. It was while a junior member of the staff at the Royal Infirmary and the New Town Dispensary of Edinburgh in 1884–6 that the conception of the dispensary method occurred to him. It was necessary to erect a new institution with new outlook, new methods, and new machinery. The methods of the tuberculosis dispensary were entirely different from those of the ordinary out-patient department. The dispensary viewed tuberculosis as an infective and endemic disease ramifying throughout the social organization in quite unique fashion. The aim of the dispensary was that not a single case of tuberculosis should occur unobserved or remain uncared for in the community. Once it got in touch with an individual patient the tuberculosis dispensary never lost hold of him. Either it treated him directly or it sent him for treatment to the appropriate institution. In the latter case it undertook his after-care when institutional treatment was over. One of its most valuable functions was to trace the patient to his home, to get at the "tuberculous nests" to investigate faulty environment, and to search out tuberculous disease among the other members of the household, and in turn to undertake the care of these. The real working centre of operations against tuberculosis could not be the ordinary out-patient department of any hospital, or the charity organization office, or even the office of the medical officer of health. With all these the dispensary must be in closest touch, but the necessary operations were so extensive and varied as to warrant the erection of a special department of public health activity. The department would, of course, be in intimate relationship with the medical officer of health, and might be under his administrative control. In relation to notification the dispensary played a two-fold part. In the first place it constituted an important notification agency; after notification it decided in practical fashion what was to become of the notified individual. His belief was that the demands of tuberculosis were so large and the issues so complex as to justify the establishment of a special department of public health activity. What was wanted was an organized and co-ordinated scheme which would include and link together the different institutions and agencies which the circumstances required. In the great campaign against tuberculosis there must exist one common centre where everything was known regarding every movement or attack and defence, and in particular where everything was known regarding every case of tuberculosis which had been unearthed in the area. If the tuberculosis dispensary was

to be worthy of the name it must be the centre of such an indefatigable organization. The one guiding idea in the whole campaign should be the unity of tuberculosis. To propose to limit notification to well marked cases—as, for example, open cases with bacilli determinable in the discharge — was to cripple effort at the outset. Now that notification of every form of tuberculosis had been ordained, they might hope to accumulate statistics of real value regarding the amount and distribution of tuberculosis in a given area. But notification was not the final word. The most pressing need was for a common system for dealing with the varying degrees of infection, based on the unity of tuberculosis, which realized that the slightest case was potentially of no less value than the pronounced case, and that the slighter manifestations were worthy of no less attention than the grave. There must be the same general plan of campaign. To make this effective there must be a central administration clear in its conviction as to what was the proper way, and able to mould policy and direct procedure throughout the country. The great defect in connexion with the anti-tuberculosis activities which had been called into being by the Insurance Act was the absence of such a central directing force. On the wisdom of their decisions and on the effectiveness of their organization depended the fortune of the individual patient, the health of the nation, and, in a certain sense, the fate of the race. The experience of thirty years satisfied him that it was only by intimate correlation and careful co-ordination of the several factors that satisfactory and permanent progress would be made.

Mr. ARTHUR NEAL (Sheffield) pleaded for co-operation between the medical officer of health, the staff of the school medical officer, the veterinary staff, and the food inspection staff, the faculty of medicine in the nearest university or medical school which could be used for bacteriological work, and the staffs of the general hospitals, including the Poor Law hospitals. He hoped that the whole of the cases which had hitherto drifted to the guardians would be taken over by the local authorities. Parliament had done its work, the medical profession was doing its work, and the question was, were the local authorities going to do their work?

Dr. HERMANN BIGGS (United States) said that preventive and curative measures were largely futile while advanced cases of tuberculosis were permitted to remain in their homes, where overcrowding, destitution, and insanitary conditions existed. The New York Board of Health utilized in all its work all existing voluntary agencies or associations of every kind. The Department of Health never undertook to do what any existing organization was doing well. In 1881 the general death-rate of New York was 31; last year it was 14. In 1881 the tuberculous death-rate was 4.9; last year it was 1.9. In 1881 the pulmonary tuberculous death-rate was 4.2; last year it was 1.6. Public health was purchasable. Within natural limits any community could regulate its own death-rate.

Dr. WILLIAM CHARLES WHITE (Pittsburg) said that continued supervision was impossible by dissociated effort with different agencies, or by one type of institution. For each district some central clearing office was necessary, with suitable correlated agencies for handling all types and classes of cases and all branches of preventive and curative work.

Dr. E. RIST (Paris) said that systematized co-ordination did not exist in France. A permanent commission on tuberculosis had been appointed many years ago at the Home Office, and was still alive, but so far it had achieved nothing. Almost the same could be said of the Academy of Medicine, which acted as an advisory board to the Government in matters of public health. It had at last, however, some weeks ago, decided in favour of the compulsory report to the sanitary authorities of every case of so-called open tuberculosis. Whether the present Government would consider the advice of the academy and take measures accordingly was still very doubtful. The minority did not regard the vote as final.

Sir CLIFFORD ALLBUTT entirely agreed with Sir R. W. Philip about the out-patients at hospitals. There was no such thing as tuberculosis. That was an abstraction. What they had to deal with was a vast number of individuals. If the clinical work was to come second to that of the medical officer of health they would run a very great risk of retrogression.

Professor CHR. SAUGMAN (Denmark) said that for the complete success of all antituberculosis measures the co-operation of the State was necessary. In no other country had the State taken so active a part in the antituberculosis crusade as in Denmark. There was no State sanatorium, but the State paid subventions to those sanatoriums and hospitals for consumptives and scrofulous which fulfilled the conditions of the law as to construction. There were now in Denmark fifteen sanatoriums with together 1,195 beds, most of them under the chief direction of the National Association against Tuberculosis, and twenty-six hospitals or special wards for more advanced cases, with together 748 beds, built by the cities and counties. For a population of 2¾ millions this was one bed for about 1,400 inhabitants. The State further partly supported two seaside hospitals, open the whole year, for scrofulous children, with together 230 beds, and eight health resorts, partly opened only in the summer, for cases of slighter scrofulosis, with together 396 beds. The expenses of the State for antituberculosis purposes had been in the last years £70,000 to £90,000 of a total budget of the State of about £5,500,000. For the greater part of the patients in the popular sanatoriums the remaining quarter of the fee was paid by the associations for mutual aid.

Sir WILLIAM J. THOMPSON (General Registrar for Ireland) gave official statistics as showing the decrease of tuberculosis in Ireland. In 1907 the number of deaths from tuberculosis was 11,679, or a rate of 2.7; this had decreased in 1912 to 9,437, equal to a rate of 2.15. The total decrease for the period 1907–1912 was 2,242, from which the following deductions are made:

1. That the death-rate from tuberculosis—namely, 2.15 per 1,000—is the lowest recorded since 1864, the year in which registration of deaths was introduced.

2. That there has been a decrease of nearly one-fifth of the total number of deaths from tuberculosis in four years.

3. That there were forty-four fewer deaths each week from tuberculosis in 1912 than in 1907. Or,

4. That every day in 1912 there were six fewer deaths than in the year 1907.

5. As it is generally recognized that there are about seven or eight persons suffering from tuberculosis for each death, the decrease in mortality shows that there were about 17,000 fewer people suffering from tuberculosis in Ireland in 1912 than there were in 1907.

Sir WILLIAM H. THOMPSON (Dublin) also gave an account of the present state of the antituberculosis campaign in Ireland.

Mr. L. C. COURTAULD (London County Council) said that some time ago the Local Government Board had called on the London County Council to formulate a scheme for the prevention and treatment of tuberculosis. In framing that scheme the Council had endeavoured to utilize to the utmost every sort of provision already in existence. They looked upon the dispensaries as the main entrance of the tuberculous patient to the scheme. For that reason they thought the dispensary should work in the closest co-operation with the medical officer of health on the one side and the general practitioner on the other. The Council had also suggested that a dispensary was not and could not be of itself a complete unit in the treatment of tuberculosis, and that it should be in close touch with a general hospital. With regard to hospitals, they had suggested that where necessary and possible the hospitals should provide dispensaries of their own, and he personally thought the London hospitals should provide a certain number of beds for tuberculous patients.

Close of the Conference.

Lord GLENCONNER, in closing the Conference, said they rejoiced to think that their joint deliberations had proved of the highest value to the world, and that by the Conference they had been able to add some notable information and assistance to those actively working in the cause. The work of the last few years had shown good results, and the atmosphere of hope and cheerful expectancy was one of the most remarkable features of the Conference.

CONGRESS ON INFANT MORTALITY.

THE fourth English-speaking Conference on Infant Mortality was opened at Caxton Hall, Westminster, on Monday, August 4th, by the Right Hon. JOHN BURNS, M.P., President of the Conference, who delivered his inaugural address to the Administrative and Medical Sections in joint session. Almost every English-speaking territory was represented at the Conference, twenty-nine special delegates having been appointed by the Governments of twenty-three different countries and colonies, whilst one or more representatives were sent by over two hundred public health authorities in the British Isles.

Presidential Address.

Mr. BURNS said this was the fourth conference on infant mortality that had been held in this country during the past seven years. Originally confined to Great Britain, it now included all the English-speaking countries, and as President he welcomed that day representatives of the Oversea Dominions, the Colonies, and the United States of America. The problem they were facing was how to reconcile the health of the people and their personal strength and individual happiness with the growth of trade and city life. It was a matter in which it was important that the English-speaking peoples overseas should co-operate. The British people had led the way in commerce, in industry, and in representative institutions. They must continue to hold their place in the world, and this could not be done by any nation except through the vigour of its men, the virility of its women, and the strength of its children. For this parents must be cleanly wed, and children nobly bred, wisely fed, and firmly led. The life of a baby was affected, perhaps, more by its pre-natal condition than by its post-natal environment, and the doctors, who he was glad to say had been the backbone of this movement, were giving ever-increasing attention to this subject. Motherhood, the rearing of physically strong boys and girls, was the noblest of all callings, and he thought they ought to see to it that it was not made the meanest of trades. Doctors did much for the community; they also did much for themselves and their families. Among the children of members of the medical profession the mortality was only 40 per 1,000, as against 100 to 130 per 1,000 among the children of artisans, and 150 to 250 per 1,000 among the children of unskilled labourers. Even in the agricultural labourer class, notwithstanding the brutally low rate of wages, the infant mortality was only 97 per 1,000. The facts showed that high wages in themselves did not prevent infant mortality. High wages often meant increased drinking, and drink always meant inferior housing. But, speaking generally, during the last few years higher wages had been accompanied by wiser spending. Considering the size of London it was an extraordinarily sober city, a fact which was noted by visitors from abroad. In this country 40 per cent. of the pauperism, which cost eighteen millions a year, was due to widowhood and orphanhood. One out of every three wives came to the Poor Law for relief through the illness of the breadwinner. As President of the Local Government Board he was foster father to 270,000 Poor Law children. That was why he was interested in the subject. He wanted his family to diminish as rapidly as possible. If these Conferences continued for the next seven years he believed that family would be reduced by more than one-half. As a result of what had already been done they were saving 50,000 lives a year in this country, or nearly the total number lost through emigration to Australia. Referring again to the Poor Law children, he suggested that childless women, of whom there were many, would be much happier in looking after them than in wasting their affections on cats and lap-dogs, working slippers for hounds, or providing bracelets for puppies. In this connexion he would be only too pleased to turn himself into a children's agency. He suggested that next year's Conference should be held not in London, but in Lancashire, say at Manchester or Liverpool. One subject to which he thought they ought to turn their attention was that of certain diseases, with regard to which society showed a prurient delicacy, that was a danger to the community. From 30 to 50 per cent. of the cases of blindness was due to the inherited taint of such diseases. He did not belong to what he called the "better dead" school, the school who declared that the larger number per thousand of the children who died the better it was for the survivors.

Special Education in Infant Hygiene.

Mr. JOSEPH PEASE, M.P. (President of the Board of Education) presided over the morning session of the Medical Section on August 4th. In opening the proceedings, he said that during the last few years there had been a considerable reduction in the rate of infantile mortality. That advance had been due in some degree, perhaps, to a slight improvement in the physical condition of the mothers, but more, he believed, to better infant care and management. Ignorance was at the root of a great deal of the preventable infantile mortality, and that was where education came in. The Board of Education had endeavoured to disseminate information through the schools. It did what it could to create a healthy public opinion, and it had also done all it could to encourage schools for mothers. He was glad to say that there were now 230 such institutions, 100 of which were doing excellent educational work. The Board was also endeavouring, through the directors of education and the local education authorities, to interest the whole of the rising generation in this subject in the best possible form. Recently an official circular had been issued authorizing the increase in the present provision in our schools for instructing the girls in the care of infants. Such teaching ought certainly to be provided for girls by the local education authorities. Teaching in infant management should be available for all girls during their last year in the elementary schools. He hoped that next year crèches and schools for mothers would be further assisted by the national education system, which he hoped to be permitted to propose.

Dr. HODGETTS (Medical Adviser to the Commission of Conservation of Canada) said that some 35,000 infants under 5 died in Canada annually, and this was due mainly to ignorance and partially to penury.

Dr. L. E. LA FETRA (New York) said investigation had shown that of 10,000 infants nursed at the breast there died during the first year of life 580; of 10,000 artificially-fed babies there died 4,588, so that the naturally-fed baby had about nine times as many chances of life as the artificially-fed baby. Manifestly, the most important factor in baby saving was to have the baby nursed by its own mother.

Control of Milk Supply.

The Countess of ABERDEEN presided over a meeting of the Administrative Section, at which the administrative control of the milk supply was discussed. She called attention to the doings of the Viceregal Commission on the milk supply which sat in Ireland a few years ago. Although the report had not yet been formally presented, she was permitted to refer to some of its recommendations. It would dwell on the importance of milk dépôts, and would also show the good results attained through the institution of a few voluntary milk dépôts dispensing small quantities of reliable milk. The question in the towns was shown to be largely one of organization, by means of which the producer and the consumer might be brought together. In the rural districts the problem was much more difficult, and the different causes of scarcity would be reviewed and explained. Various recommendations likely to remove or minimize these difficulties were to be made in the report. The commission would also refer to the importance of winter dairying, the keeping of milk records, and the improvement of the milk-yielding properties of cows, and it would be shown that this could with certainty be attained. The second part of the report dealt with the prevention of the contamination of milk. The recently issued Tuberculosis Order for the slaughter of tuberculous cattle had gone very far to meet the recommendations made. The recommendations the Commission hoped to make aimed at establishing uniform and efficient administration by local authorities under the supervision of inspectors responsible to a central authority. The many causes leading to the infection of milk, and thereby to the spread of infectious disease, were laid stress on, and recommendations were made for strengthening the laws relating to the detection of the sale of infected milk and to the

precautions to be taken by all connected with the handling of milk. The Women's National Health Association were preparing to do their best to promote an educational campaign on the subject as soon as the report appeared in the autumn.

Professor J. M. Beattie, City Bacteriologist of Liverpool, read a paper in which he recommended the systematic inspection of cattle by full-time veterinary inspectors; the establishment of isolation farms by local authorities, the farmer or dairyman to be recouped for any loss he might sustain in consequence, and the bacteriological and experimental testing of milk by experienced bacteriologists.

Dr. E. W. Hope, Medical Officer of Health for the City and Port of Liverpool, said that dépôts had been established in Liverpool for the supply of the nearest approach to human milk for infants whose mothers were not able to nurture them. Over 20,000 infants had been fed from these dépôts, the cost of which had been largely in excess of the amount paid for milk. Experiments had been made during the past two years with a view of lessening the cost of sterilization, and researches had been carried on by Professor Beattie and others on the electrical sterilization of milk. The upshot of these investigations was that it had been shown that milk could be effectually sterilized by electrical methods, all extraneous organisms being destroyed.

Dr. Lenane, Medical Officer of Health for Battersea, said that in London the milk supply was very unsatisfactory. As a result of the statutory powers obtained by the London County Council five years ago, a large quantity of milk had been examined, and of this 11 or 12 per cent. was found to be tuberculous.

Ante-natal Hygiene.

In the Medical Section, presided over by Dr. Charles A. Hodgetts, Medical Adviser to the Commission of Conservation of Canada, a discussion took place on Ante-natal Hygiene. Among the subjects dealt with was the working of the maternity benefit under the National Insurance Act. This was brought forward by Dr. A. K. Chalmers, Medical Officer of Health for Glasgow, who submitted a paper by Miss Barbara Sutherland, one of his assistants. Miss Sutherland said that maternity benefit was almost always paid in cash to the husband in cases where he was insured. In very few cases the Insurance Society retained part of the benefit to make direct payment either to the midwife or to the maternity hospital. At least one society only paid 15s. immediately after the confinement, retaining the balance of 15s. for fourteen days, lest any emergency should arise within that time, while another society was accustomed to send its agents to the homes to pay the money at an hour when both parents were usually present. In some cases, where the woman made a direct application, and explained that her husband would abuse the benefit, the money was paid to her on her application. One notable effect of the Act was the raising of midwives' fees, and this was a decided hardship in cases where benefit had not been received, or where received, was less than the fee, as was often the case with the deposit contributor. Abuse of the benefit money was, unhappily, very common. Cases were numerous in which the husband received the entire thirty shillings and spent it in liquor, while in many cases the receipt of benefit resulted in one or two weeks of unemployment for the husband. Sometimes, in anticipation of the benefit the man would stop work and refuse work when it was offered to him. Some men had devised an ingenious method of evading the accusation of not giving the benefit money to the mother; they handed over the thirty shillings to her, but deducted that amount from the usual money given for household expenses. Mothers sometimes said they were better cared for at previous confinements, when there was no maternity benefit, as the receipt by the husband of the thirty shillings was often sufficient to disturb the peace of an entire family. The way to stop such abuses, to a very large extent, was to pay the maternity money direct to the wife before her confinement.

Venereal Disease.

Dr. F. W. Mott, Physician to Charing Cross Hospital and Pathologist to the London County Asylums, said some outspoken words on this subject. He asserted that venereal disease was preventable and ought to be prevented. The public conscience should be educated to the necessity of dealing seriously with the question from a preventive as well as a curative point of view. A fruitful commencement could be made by examining by the Wassermann test the bloods of all suspect mothers and children. It was desirable, he said, in conclusion, that a Royal Commission, as suggested by Sir Malcolm Morris, should be appointed to inquire into the best means to be adopted for the prevention of the disease to which he referred and other diseases belonging to the same category.

Conclusions.

In the afternoon a joint meeting of the Administrative and Medical Sections was held to consider the conclusions arrived at. Alderman Benjamin Broadhurst (Huddersfield), who occupied the chair, said that the Executive Committee had watched the proceedings of the Conference and had drafted a number of resolutions. These were submitted seriatim and agreed to one by one with absolute unanimity. They were as follows:

1. That this Conference urges that the maternity benefit be made the property of the mother both in practice and in law.
2. That in view of the damage liable to be wrought to growing girls by injudicious stress of education, especially during puberty and adolescence, this Conference feels bound to deprecate any form of education for girls which pays insufficient attention to establishing good bodily health and development and complete fitness for maternity and the practical care of a home.
3. That this Conference urges upon the Government the necessity—in the interests of both mother and child—of legislating for the registration of stillbirths.
4. That this Conference urges upon the Government the necessity for the more complete medical certification of death, and that the medical death certificates should be forwarded to the registrars, as confidential documents, under sealed cover.
5. That the time has arrived for steps to be taken with a view to securing the better training of women who apply for the certificate of the Central Midwives Board.
6. That this Conference requests the Executive Committee to communicate with the General Medical Council and the degree and licence-conferring bodies with a view to infant hygiene being given a more important place in the medical curriculum.
7. In view of the large percentage of stillbirths and infant deaths directly attributable to venereal diseases, and considering that infant blindness and other congenital defects are in many cases due to the same cause, the English-speaking Conference on Infant Mortality urges the respective Governments of the countries therein represented each to appoint a commission to inquire into the prevalence, the causes, the provision of treatment, and the possibility of the prevention of these diseases.
8. That the attention of the Board of Education be drawn to the extreme desirability of making the grant earned by "recognized" infant welfare centres depend in future on their efficiency, on the number of registered attendances of the mothers at consultations, classes, and talks, and on the number of home visits paid under adequate supervision.
9. That this Conference calls on the Government to give explicit powers of making grants for infant consultations and schools for mothers.
10. That the Executive Committee be instructed to take whatever steps they may think desirable in order to ensure a microscopical examination of milk, to be supported by analytical methods.

The French Minister of Labour has signed a degree appointing a commission to inquire into the whole question of the conditions of the participation of the medical profession in the application of social laws.

The *Boston Medical and Surgical Journal* of July 10th states that it is reported that a bill relative to the prevention of marriage of the unfit has passed both Houses of the Pennsylvania Legislature. The bill provides that no marriage licence shall be issued when either of the parties is epileptic, an imbecile, or of unsound mind, nor to any man who is, or has been within five years, an inmate of any county asylum or home for indigent persons, unless the applicant can show that the cause of such condition has been removed, and he is able to support a family. Applicants for licence to marry must also file a statement declaring themselves free from transmissible disease.

THE NATIONAL TEMPERANCE LEAGUE.

ADDRESS BY MRS. MARY SCHARLIEB, M.D., M.S.

ON conclusion of the breakfast given by the National Temperance League at Brighton on July 24th, under the chairmanship of Dr. AINSLIE HOLLIS, an address on the subject of the responsibility of medical men in regard to temperance among child-bearing women was delivered by MRS. SCHARLIEB.

One of the heaviest responsibilities of doctors, she said, was that of fostering the moral well-being among those who put themselves under their care, and this responsibility was greatest of all when such patients were actual or prospective mothers. On the health of their bodies and the integrity of their moral and spiritual nature depended not only the welfare of their children and their homes, but the more important extension of the family, which was known as the nation. The huge outlay of the nation on alcohol was in any case regrettable, and it was among the women of the nation that the effect of alcohol consumption was most serious. It was said that among women the habit of drinking had greatly increased, and on no class of women did the penalty of alcohol fall with such disastrous results as on those of child-bearing age. Nor was it only the women that were evilly affected. It was said that every individual came into the world with his fate written on his forehead, and that virtually his fortune, whether good or bad, was settled before he attained independent existence. It was useless to inquire how far back extended the influences which made a man what he was and what he would be, but it was perfectly certain that those influences were intensified and became potent during his pre-natal existence. Frequently the embryo offspring of alcoholic parents died *in utero*, while the children who were born alive had to contend against two sets of deteriorating influences; they started life with badly nourished tissues and poor constitutions, and owing to the deficiency in suckling power exhibited by alcoholic mothers they had to be brought up by hand. Medical men knew that alcohol was just as much a poison as opium, strychnine, or arsenic, and this being the case ought they not to use their undoubtedly great influence over the child-bearing women of the country to induce them to take things that were profitable to them and to abstain from such things as alcohol, which could not but be deleterious? During three months of pregnancy even the strongest women had their constitutions strained to the utmost, and the medical profession should make it its special duty to protect them from the evil advice of foolish mothers and grandmothers and other Sarah Gamps of that sort who were prone to suggest a "little drop of brandy." The infant mortality had not fallen in the same ratio as the adult death-rate, and among the causes which accounted for this fact must be included the frequency with which mothers were of alcoholic habits.

According to the researches of W. C. Sullivan, 55 per cent. of the children of alcoholic women were either still-born or died before attaining their second year. Furthermore, of those who survived infancy, from 12 to 15 per cent. became epileptic, and many more showed that peculiar defect of brain and nerve power which accounted for the army of mental defectives. Comparatively little could be done towards effective teaching of habits of temperance, prudence, and thrift to women who were already grown up and had formed habits of intemperance, but the majority of young people under 20 years of age did not drink, and much might be done by careful instruction both in schools and in public lectures and addresses to point out the advantage of sobriety. Positive rather than negative teaching was desirable, stress being laid not on the terrors of the police-court and other miserable results of intemperance, but on the beauty of temperance and its happy results in healthy bodies. The passion of the young for cinematograph exhibitions could be turned to advantage by teaching them to admire endurance and heroism, and making it clear that people who have shattered their nerves by indulgence in alcohol were necessarily incapable of great feats of this kind. In the past false standards had been set up for admiration and imitation. Many of the songs of the nation were in praise of wine, and the figure of John Bull which was put forward as a representation of the national spirit surely did not represent the highest type to which the nation should aspire. In some respects medical men had wider opportunities of bringing influence to bear than any one else, but in order to exert it in the right direction they must be fully persuaded in their own minds as to the advantages and even the necessity of temperance, as well as set a good example themselves. They must also be prepared to take a certain amount of trouble to put themselves in a position to give a reason for their faith by studying the results of the researches of laboratory investigators in regard to the influence of alcohol on various forms of vegetable and animal life and on mental processes. They should also have some knowledge of the laws of economics, and of the part that alcohol had played in the deterioration of the race and of its power to swell the death-rate and to create criminals, lunatics, and imbeciles. They should also be students of history, studying the campaigns of Wellington and other commanders, and noting the influences that alcohol had had on some who would otherwise have been among the bravest and wisest of mankind. Above all, they must recognize that a right system of education, combined with a sure faith, fervent hope, and never-failing charity, would suffice to save the country from an age-long reproach and from an insidious poison which was sapping her vitals.

At the conclusion of the address a vote of thanks to Dr. Scharlieb and the Chairman was moved by Dr. NEWSHOLME, who said that it was indeed true that the responsibility of medical men towards the child was heavy, but it had been still heavier in the past. The medical views of one decade were the popular views of the next, and medical men should now show that alcohol was not necessary or even suitable for ordinary dietetic purposes, and that mankind was better without it.

LITERARY NOTES.

THE Cambridge University Press is about to publish a book on *The State Provision of Sanatoriums*, by Dr. S. V. Pearson, of the Sanatorium, Mundesley. The author deals from a practical point of view with the complicated questions involved in the State provision of these institutions, and also indicates what is being done in this direction in Germany, Norway, the United States, and Hungary, as well as in this country.

An interesting article might be written on the influence of the motor in modern life. It would be out of place here to discuss the part it has played and continues to play in fanning the flame of class hatred set aglow by incendiary declamation, or the increased facilities which, as Lombroso foretold, it affords for crime. But it may be said that the motor has already brought into existence a vocabulary of its own which is gradually filtering into ordinary speech. An amusing proof of this was given in the *Pall Mall Gazette* of August 5th, where in the list of general addresses to be delivered before the International Congress of Medicine Professor "Chauffeur" appeared as the orator on medicine!

At a meeting of the French Society of the History of Medicine, a brief report of which was published in the *Gazette Médicale de Strasbourg* for June, 1913, Dr. Georges Hervé communicated some pages of reminiscences, not intended for publication, by Dr. Kaempffen, who, born at Brigues in the Valais in 1784, served as a military surgeon during the wars of the First Empire, and was attached under the Restoration to the Seventh Regiment of Infantry of the Royal Guard, then practised medicine in Paris till his death, which occurred in 1856. The extracts relate to Kaempffen's medical studies, and show what the teaching of medicine at Vienna was in the first years of the nineteenth century. Professor Letulle read and commented on some manuscript notes of Laënnec relating to morbid anatomy. He said he thought it was, perhaps, not without regret that Laënnec, after his discovery of auscultation, gave up the study of morbid anatomy in 1816 to devote himself wholly to clinical medicine.

Seventeenth International Medical Congress.

London, August 6th to 12th.

GOVERNMENT BANQUET.

ON Tuesday evening, on the invitation of Earl Beauchamp, First Commissioner of Works, on behalf of the Government, a banquet was given at the Hotel Cecil to about 500 members of the Congress, including most of the foreign delegates. The President of Council, Viscount MORLEY OF BLACKBURN, presided, and among those present, in addition to the speakers, were:

Earl Beauchamp (First Commissioner of Works), the Right Hon. John Burns (President of the Local Government Board), the Attorney-General, Sir Donald MacAlister (President of the General Medical Council), Professor Chauffard (Paris), Professor Harvey Cushing (Brooklyn), Professor Dr. Baron Korányi (Budapest), Professor von Eiselsberg (Vienna), Dr. Wu Lien Teh (China), Professor D. O. de Ott (St. Petersburg), Dr. Ritter von Harberlen, Dr. W. S. Thayer (Baltimore), Médecin-General Bertrand (Paris), Professor Uchermann (Christiania), Professor Mokuhi Kubo, Dr. Raffaele Bastianelli (Rome), Professor Waldeyer (Berlin), Dr. N. van Rijnberk (Amsterdam), Professor Dr. G. E. Essenmöller (Sweden), Professor Paul Ehrlich (Frankfort), Professor Dr. T. Rovsing (Copenhagen), H. E. Dr. Camillo Calleja (Madrid), Professor Leonardo Bianchi (Naples), Dr. Rapchewsky (Russia), Dr. Broden (Belgium), Dr. Sahli (Berne), M. Vaillard (Paris), Dr. de Toth (Budapest), Dr. de Freitas Crissiuma (Brazil), Dr. Recassens (Madrid); the Director-Generals of the Medical Department of the Royal Navy, of the Army Medical Service, and of the Indian Medical Service; Sir William Church, Bart.; Sir Dyce Duckworth, Bart., and Mr. G. H. Makins, C.B. (treasurers of the Congress); Sir Almeric FitzRoy, Clerk to the Privy Council; Sir Rickman Godlee, Bart., President of the Royal College of Surgeons of England; Sir Henry Morris, Bart., Sir A. Pearce Gould, Sir R. Douglas Powell, Bart., Sir James Reid, Bart., Sir Edward Schäfer, Professor J. G. Adami (Montreal), Professor A. McPhedran (Toronto), Professor J. T. Wilson (Sydney).

At the foot of each cross table was a member of the Executive Committee, including Sir Malcolm Morris, Sir StClair Thomson, Sir Francis Champneys, Sir William Osler, Sir Lauder Brunton, Sir Watson Cheyne, Sir David Ferrier, and Dr. W. P. Herringham, General Secretary of the Congress.

After the CHAIRMAN had given the loyal toasts, Lord Morley, in the name of the Government, proposed the toast of the Seventeenth International Congress of Medicine.

SPEECH BY LORD MORLEY.

Lord MORLEY said that he had the great honour of offering to the Congress, in the name of His Majesty's Government, a cordial, sincere, and respectful welcome. The occasion was no common one, and he begged his hearers to believe that the welcome was a great deal more than formal. Many renowned men, devoted to medical pursuits and aims, had passed away since the International Medical Congress had last met in London, a generation ago, leaving fame and the records of rich work behind them. A generation of earnest and continuous toil, ingenuity, search, thought, invention, had produced endless discoveries in medicine, endless improvements in surgery. Medicine covered double ground. As Huxley said—and he could not name without regretful memory that valiant lover and finder of truth who was the good friend of so many present—as Huxley said at the Congress of 1881, they were so used to thinking of medicine as something necessarily connected with curative treatment that they forgot that there was such a thing as a pure science of medicine, a pathology which had no necessary subservience to practical ends. The programme of the Congress about to open covered both—both knowledge and the application of it to the alleviation of pain, the maintenance of health, and the protraction of life. The services of medicine to surgery and of surgery to medicine had been reciprocal, and it was not for a layman to say in which of the two the advance had been most wonderful. The same span of time had witnessed many a marvel in mechanics, engineering, electricity, applied chemistry, and the rest. But new truths and new expedients in medicine, the advance in pathological theory and surgical practice, might perhaps be counted the most striking marvel of them all.

As a layman he had no right to do more than convey the Government's deep gratification at the presence of the Congress on the banks of the serene Thames next after the session on that mightier stream, though of more embarrassing political associations, the Danube. The number present had never before been equalled. The prolonged labours of organization which had fallen upon the staff of the Congress, the selection of subjects and speakers, the conduct of an immense circuit of correspondence, had never been better rewarded. The response had come from some thirty communities all over the world. No gathering could be more genuinely instructional. The brightest stars in the firmament of medical light were present. The list of topics was rich, apt, and comprehensive. Nothing could be more entirely promising of fruitful results. Much was heard of the Concert of Europe's benignant dreams of universal peace. The growth of mutual goodwill among nations was a slow process enough. But these congresses, so numerous just now, apart from their stream of contribution to positive knowledge, apart from their indirect effect upon the common mind in setting examples of intellectual energy and concentration, in teaching that respect for standards of competence which some suspect the democracy of being inclined to overlook—apart from all that, these congresses could not be anything but real and powerful unifying agents in a world where so much makes for disunion. Complaints were heard of excessive specialism; and, by the way, the very same complaints were heard at the History Congress a month or two ago. It was not for him to say a word on the vicious ways of pathological specialism, if such ways there were. He would only say what he would say on subjects with which he was better acquainted. There were narrow specialists and broad. He hoped that medical specialists would all prove of the broad sort—men who, while doing priceless and indispensable work in particular organs, parts, and regions, maladies and lesions, yet kept well in touch with organization and function as a whole. Foreign members of the Congress might learn that the relations of the Government with the medical profession were for the moment not altogether of the easiest. He would in turn assure them that the difficulties were ephemeral and would be surmounted by and by. (Cheers.) "We shall soon," he said, "be as good friends as the guardians of the body politic and the guardians of the body physical should be. The Congress is concerned with knowledge, and not with questions of medical organization, etiquette, or position."

The great achievements of Darwin, Virchow, and Pasteur had irresistibly brought new respect for science and the spirit of science to anybody capable of any intellectual interest at all. All this had not been without effect of an indirect sort upon the most scientific of what used to be called the three learned professions. Respect for professional truth and knowledge, in standards every day higher and more exacting, had grown in the practitioner himself; respect for the practitioner had grown in the public and the patient, and the old-fashioned apothecary of the novels had given place to a scientific man who held his head as high in the social hierarchy of the world as the lawyer or the divine. The extension of medical influence in the political and social field in the United Kingdom was one of the most striking signs of the times. Its power in the framing and administration of laws grew greater every day. It was the physician's

influence, for instance, that had insisted on the notification of diseases, on the enactment of a whole code of housing Acts, shops Acts, and health Acts. Historians asserted that for a thousand years Europe was unwashed; that was no longer a universal truth. The physician's influence was invoked against excess in the speeding up of education, and attention drawn to the dolorous number of suicides among youths in a powerful Continental country where passion for knowledge was a national glory—suicides due to a double overstrain, the pressure of the teacher and the pressure of the emulous parent. The Mental Deficiency Bill was the last example of this medical influence.

The quadrennial migrations of the Congress exposed its members to grave variations of ethical climate. Here, for example, there was a strong volume of energetic feeling and opinion against anything like unrestricted experiments on living animals. The age was doubtless more and more touched with the temper of Lord Bacon's saying, "The nobler a soul is, the more objects of compassion it hath." It was of the essence of true civilization that it should be so. Whatever line might be taken on this particular matter, every one had abundant evidence every day that in no body in the world was this blessed temper more alive, more constant, more self-sacrificing than in the good physician. Another painful subject caught the eye in the fifty pages of agenda of the Congress—the horrible dangers of a certain disease transmitted in the dark through generation after generation of a community, and the further question of Government control and responsibility in connexion with it. Here again ethical considerations held, and rightly held, a leading place in public opinion. What might be called the surgeon's reason of State, important as it must be, could not stand as the single decisive factor; at the same time it would be sheer moral cowardice to shrink from a large and serious inquiry into the extent, the causes, the palliatives of this hideous scourge just as the ravages of tubercle or cancer are investigated. Lord Morley concluded as follows:

In thinking of all the great things that science could do for government, if it only had the chance, I do not forget what the Russian Empress said to the French philosopher: "You only work on paper," she said, "I work on the human skin, which is irritable and ticklish to a very different degree." You gentlemen are to have discussions on affections of the skin, and political dermatology is a very different thing, though Virchow was almost as actively interested in politics as in science. But I beg you to be certain that those who are called to its study and application look with admiration and gratitude, with perhaps a spice of envy and assuredly with their warm good wishes, on you who devote your genius, talent, and the quiet study of your lives to the subjects that will engage your animated attention for the week to come.

The toast was acknowledged by Sir THOMAS BARLOW, President of the Congress; M. LANDOUZY, Dean of the Faculty of Medicine in the University of Paris, and by Surgeon-General Professor VON SCHJERNING, who spoke in the name of Germany.

RESPONSES.

The President.

Sir THOMAS BARLOW said: I wish, on behalf of my colleagues, to express our gratitude to His Majesty's Government for their gracious hospitality to our foreign brethren and ourselves on the eve of our great Congress. In this gracious act I believe that the Government has given its imprimatur to the view that there is no branch of knowledge which has a more vital and pervading influence on the welfare of the body politic than the science-art which we desire by our Congress to advance. I say advisedly the science-art, for we are concerned with medicine not only as a branch of learning which claims liberal tithes from the auxiliary sciences, but as an art which strives to ameliorate and even to cure many of the physical ills of mankind. And I believe that this Government recognition proves that outside all party politics there is an increasing willingness to utilize medical co-operation in all matters of education, of public health, and of social improvement. We ought to realize that the growth of medicine means the understanding of a great part of the mechanism of our lives, of the true operation of the physical hindrances to our growth and harmonious development, and of how to overcome those hindrances in the interest of the individual and of the community. In this sense medicine is one great portion of the growth of the practical science of living, and its advance concerns every single human being on this planet. The Government recognition is, I think, also a great encouragement to us in our claim that medicine oversteps all racial boundaries, that it is in the highest and best sense an affair of world politics, and that it contributes to peace and goodwill towards all men. I can assure you, my lord, that the Congress to be inaugurated to-morrow is not an assembly merely for pleasant intercourse and amusement, and for the exchange of international courtesies, but that it is a meeting for solid work. A large proportion of that work is contributed by our foreign brethren, and our efforts in London during the last three years have been unsparing in order to arrange for the work to be adequately set forth and subsequently recorded for the general good. It represents advance all along the line in the knowledge of the natural history of disease, of the newest methods of its recognition, and of the most effective means of treatment. We trust and believe that the elaborate summaries of results which have been supplied with no ungrudging hand by the best workers in the twenty-three sections of our Congress may be thoroughly sifted and discussed by our members, and may when published bring forth much fruit. I desire in conclusion to say how warmly we appreciate the circumstance that you, my lord, have been chosen as host and spokesman of His Majesty's Government on this occasion. You have always been glad to recall the links which bind you to our profession. You have always rejoiced in the broadening of its culture, in its widened outlook, and in its advances into new regions of knowledge and achievement. We do not forget, and our foreign brethren do not forget, the debt we owe to you for instruction in the aims, the partial successes and the failures of many of the leaders of liberal thought before and at the time of the French revolution. Still less do we forget the lessons of political philosophy which you have taught us in the lives of statesmen of our own time and of earlier periods of our history. I believe that you will approve the decision at which we arrived to include amongst the new sections introduced in this London Congress one on the history of medicine. No English statesman or man of letters can more appropriately wish our Congress God-speed. For we desire to ponder over the lessons of the many-sided past, with its broken lights, its chequered path through obscurantism and empiricism, its glorious episodes of discovery and emancipation. We believe that we are right in rejoicing over our present vantage ground of solid and sane achievement, and we look forward to an opening day of further enlightenment with courage and hope

France.

M. LANDOUZY, who spoke in French, dwelt upon the many common ideas which England and France and the geniuses of the two nations had contributed to the parallel march of progress throughout the centuries. If England had Bacon, Harvey, Shakespeare, Locke, Milton, Newton, Herschel, Sydenham, Jenner, Faraday, Stephenson, Bright, Darwin, Reynolds, Gainsborough, Lawrence, Lister, and Ramsay, France had Clouet, Montaigne, Descartes, Pascal, Corneille, Molière, Racine, Bossuet, Condillac, Watteau, Lavoisier, Lamarck, Victor Hugo, Lamartine, Claude Bernard, Pasteur, and Curie. British thinkers, artists, and savants—people of action as much as of ideas—displayed the depths of the British temperament and that practical sense which in all branches of human activity inspired the noblest men of genius. It was that which in all time made so characteristic the powerful British race, and it was that which caused the moralist of Champagne to say, "The English think deeply; their spirit in that follows their temperament; delving into subjects and strong in their experiments, they extend everywhere the empire of the sciences." La Fontaine had so rhymed, and the fact was that Bacon had laid down the rules of experimental science, that Harvey had first discovered the circulation of the blood, and Newton the laws of universal gravitation. The fact was that, though he was the contemporary of Sydenham,

La Fontaine, like every poet, was a prophet. He foresaw Jenner, Darwin, Herschel, and that fine line which, without a break in continuity, had illuminated the British nation. Medicine from being individual, as it was formerly, had come into the service of public hygiene and social economy, giving more value to life, rendering suffering less cruel, old age less trying, death more tardy and less alarming. It worked ceaselessly in order that the solidarity which was the dream of yesterday might become the reality of to-day in modern medicine.

Germany.

Surgeon-General VON SCHJERNING, who spoke in German, also responded. He said that in the past it had been long before medical reforms had passed from the country of their origin to other lands. Nowadays it was very different. The best proof was that the medical men of all countries had come to the aid of the wounded in the recent war. In the words of Prince Hohenlohe, to work for the common weal was only a duty of humanity. Therefore, they were greatly indebted to the British Government, who had called together a Conference which would work for the progress of medicine, and he called upon his countrymen present to drink to the British Government and success to the Conference. At the conclusion of this speech the German members of the Congress rising in their places drank the toast with Hoch, hoch, hoch!

The proceedings then ended.

OPENING MEETING.

THE OFFICIAL WELCOME TO THE CONGRESS.

THE scene at the Albert Hall at 11 a.m. on August 6th, when the opening meeting took place, was a brilliant one. Even the remotest galleries of the vast building were occupied, so great was the press, and many had the greatest difficulty in securing admission. Numbers of the delegates were in academic dress or in brilliant uniforms, and the assembly included many ladies. There was an enthusiastic demonstration when H.R.H. Prince Arthur of Connaught, Sir Edward Grey, and Sir Thomas Barlow, the President of the Congress, passed through the hall to the platform.

The PRESIDENT at once called upon Prince Arthur of Connaught to declare the Congress open.

H.R.H. PRINCE ARTHUR OF CONNAUGHT.

H.R.H. PRINCE ARTHUR OF CONNAUGHT said it was hardly necessary for him to assure the assembly of the very great pleasure it afforded him to be present to welcome, in the name of the King, the representatives of all branches of medical science from every quarter of the globe. His Majesty, the patron of the Congress, had been graciously pleased to command him to give expression to his earnest hope that such international meetings might conduce to the advancement of the great science of medicine and to the general well-being of mankind. His late Majesty King Edward VII, as Prince of Wales, opened the International Congress of Medicine in London in 1881, and Prince Arthur of Connaught said it was a source of peculiar satisfaction to him to have the privilege of following in his footsteps and to open the world-wide Congress on this occasion. In 1881 Sir James Paget was President, and M. Pasteur, to whose wonderful discoveries the whole world was so much indebted, was present. Marvellous as those discoveries were considered at that time, science had still advanced, and the discovery of Roentgen rays and radium within the last few years had furnished the medical world with powerful weapons for the diagnosis and treatment of disease. He would be voicing the opinion of all present in saying that Sir Thomas Barlow and the representatives of foreign countries and the British dominions beyond the seas were worthy successors of the President and representatives of the 1881 Congress. Might he remind them that although this Congress was meeting in London, it was not England alone that was the host? Canada, Australia, New Zealand, South Africa, and India were represented with Englishmen on the various committees, so it was really the Empire, and not the United Kingdom, which was giving this Congress, thus forging another link in the Imperial ideal. He claimed to have some experience of international exhibitions, and he was fully sensible of the good they had done in promoting friendly relations with foreign nations. Therefore he was quite convinced that even greater and more far-reaching international benefits might result from such a Congress as this, which afforded opportunities for its members of acquiring and imparting knowledge to one another in a mutual exchange of ideas and discoveries. A Congress with a membership of 8,000 persons constituted a meeting of huge dimensions, and must surely appeal to the imagination. Although much of the work must necessarily be of a technical character, there would be a great deal of general interest, and the best men from all over the world had been chosen to introduce the subjects. He would not dwell on the various problems to be discussed—this would doubtless be explained by Sir Thomas Barlow—but he took the opportunity of congratulating the Reception Committee on the success of its labours, of which the meeting afforded evident proof; he had no doubt that at the close of the Congress the committee would feel fully repaid. He had the greatest pleasure in welcoming the Congress, and he was further desired to inform the delegates that His Majesty was very pleased that they were to be his guests at Windsor. He hoped they would find themselves as much at home in this country as they were in their own homes, in some cases so very far away. In the name of the King he declared the Congress open.

SIR EDWARD GREY.

Sir EDWARD GREY said it was his most agreeable duty to offer the Congress a welcome on behalf of His Majesty's Government; he need scarcely say that welcome was most whole-hearted and sincere. Lord Morley had already expressed the feelings of the Government in words more eloquent and more thoughtful than his could be, and he associated himself entirely with Lord Morley's tribute of respect and admiration for the work to which the Congress was devoted, and for the wonderful advances which the science of medicine had made within living memory. The Congress included so many men of great distinction that the Government felt it an honour to have it assembled in this country. Besides that, the Government knew this to be a Congress which, while accepting its welcome, could not possibly have occasion to invite its intervention. Science, in the true sense of the word, was international; it had its controversies, but they were not national controversies. Men of all nations who had risen to that plane of knowledge, thought and research which was worthy to be called science, were not separated in their work in that sphere by political or national rivalries, however deeply they might share the politics and feelings of their respective nationalities of all parties in other departments of life. In the case of the science of medicine and surgery, every man in the country had an individual interest in the work of its exponents to an extent that hardly existed in the case of any other science. To some sciences men looked for much to add to the variety or amenity of life; to medicine and surgery they had learnt to look for something that came home to them still more: the relief of suffering, the relief that took from life one of its greatest terrors. Nor did medical science appeal to the general thought of mankind in a less degree than any other. Medicine and surgery were, in their scientific work at least, as near to the study of what a lay mind would call the secret of life, or the secret of the universe, as any conceivable form of science could be. The imagination of men waited upon their work with the expectation that at any moment the medical profession might stimulate the thought and quicken the pulse of mankind by lifting still further a corner of the veil, and showing yet a little more of what had been hitherto mysterious, unexplained and unintelligible. As far as the public mind was concerned, science was in one respect fortunate to-day; the rock of lay ignorance was not so intractable as it was in earlier generations. So far as the public was concerned, opposition had given way to expectation; people were more ready to welcome a new discovery than to oppose it with an old error; at least he thought this was so with regard to those forms of science with which the Congress was especially concerned. If politics were entitled to be called a science he would speak with greater hesitation on this point, for no one was

very teachable in a subject which every one thought he understood. But as regards the science of medicine and surgery he did claim that the public was teachable and not only well disposed but grateful. Therefore the Government and the nation were glad to welcome the Congress with the greatest cordiality. They were all unfeignedly glad that London should be honoured as the meeting place of the Congress, and by the presence of so many men of world-wide distinction who came from abroad to attend the Congress and to add knowledge, lustre, and fame to its discussions.

Sir THOMAS BARLOW then delivered the address which is published elsewhere in this issue (p. 285).

The GENERAL SECRETARY (Dr. W. P. Herringham) said that, as representing the University of London, he had great pleasure in welcoming the delegates to London and to the buildings which the University had been able to place at the disposal of this vast congress of learned men. Dr. Herringham also alluded to the difficulties encountered in arranging the Congress. He wished to express his gratitude to the staff—mostly composed of women—which had dealt with the work in a way that was astonishing.

REPRESENTATIVES OF FOREIGN GOVERNMENTS.

The remainder of the meeting was devoted to addresses by representatives of foreign Governments, who were introduced to the Congress by the General Secretary, Dr. W. P. Herringham, and expressed their good wishes for the success of the deliberations. The following is a list of the representatives:—The United States of America, Dr. William Thayer; Austria, Professor Ritter von Haberlen; Argentina, Dr. Eliseo V. Segura; Belgium, Professor Heger; Brazil, Professor Marcos Cavalcanti; China, Dr. Wu; Cuba, Dr. Aristides Agramonte; Denmark, Dr. T. Madsen; France, Professor L. Landouzy; Germany, His Excellency Professor v. Schjerning; Guatemala, Dr. José Azurdia; Holland, Dr. N. van Rijnberk; Hungary, Professor Dr. Emile de Grosz; Italy, Professor L. Bianchi; Japan, Dr. Takamino; Mexico, Dr. Jose Larumbé; Monaco, Dr. E. Caillaud; Nicaragua, Dr. Alejandro Cesar; Norway, Professor Dr. Uchermann; Portugal, Dr. Luiz de Freitas Viegas; Russia, General Dr. Rapschewsky; Servia, Dr. Subbotitch; Spain, Professor Recassens; Switzerland, Professor Sahli; Sweden, Professor Dr. G. E. Essenmöller.

The President of the Permanent Commission of the Congress, Professor WALDEYER, and the President of the International Medical Press Association, Dr. LUCAS-CHAMPIONNIÈRE, also spoke.

THE ADDRESS IN MEDICINE.

The President of the Congress, Sir THOMAS BARLOW, took the chair at the Albert Hall at 5.30 p.m. on August 6th, when Dr. Chauffard, Professor of Clinical Medicine in the University of Paris, gave the Address in Medicine. The audience filled a considerable section of the arena of the hall. The address is reported at p. 286 of this issue of the JOURNAL.

At its conclusion Sir Thomas Barlow expressed the thanks of the audience for an address which he described as truly philosophical, linking old and new maxims, and rich with illustrations from every branch of our body of knowledge.

CONGRESS OF THE INTERNATIONAL ASSOCIATION OF THE MEDICAL PRESS.

THIS is the fourth Congress, and it met in the Jehangir Hall of the Imperial Institute on Tuesday, August 5th, at 11 a.m.

It is now the rule for these congresses to assemble one or two days before the International Congresses of Medicine, and thus the last Congress was held at Budapest Congress four years ago. But on that occasion it sat for two days, and many more questions were discussed. In the present instance the agenda was very short, and one day sufficed to dispose of all the business.

Dr. LUCAS-CHAMPIONNIÈRE, President of the Association, was in the chair, and after a few words of welcome, Dr. SQUIRE SPRIGGE presented the report of the British Branch of the Association. He pointed to the important political work the medical press had accomplished in dealing with the Insurance Act. In the course of these remarks, he paid high tribute to the BRITISH MEDICAL JOURNAL for ably giving voice to the official opinion of the medical profession. The other journals, including the *Lancet*, were free to criticize both the Insurance Bill on one side and the medical profession on the other. Nevertheless all the medical journals, without exception, had worked together to modify and improve the insufficient conditions which, in the first instance, were offered to the profession. Never before had the medical press exercised so great a political power, and it showed that they had a large share in shaping the destinies of the country and securing the welfare of the people.

Dr. BLONDEL, as General Secretary, followed, and summarized the decisions adopted at the Budapest Congress and by the International Committee of the Association when it met at Rome last April, previous to the International Congress on Tuberculosis. In the interval the Italian Branch of the Association, which had been divided against itself, was harmoniously reconstituted. On the other hand, the Spanish Branch was now involved in disputes that were destroying the strength of its organization.

Medical Terminology.

Dr. BLONDEL introduced a discussion on medical terminology in a lengthy paper which was only completed at the termination of the morning session. The discussion was resumed in the afternoon. It was ultimately decided that Dr. Blondel should revise his report and introduce into it a concrete illustration of the method he suggested for the reform of medical terminology. His report will then be sent to all the associated nationalities. They would be given twelve months to examine the proposals and express their opinion. These criticisms were to be forwarded to the General Secretary and then a report could be prepared indicating what action should be taken in the matter.

Advertisements.

Professor POSNER (Berlin) presented a report on the question of the advertisements medical journals might publish. Efforts had been made, in Germany, to prevent the advertisement of drugs which pretended to do more than what had been proved by impartial tests they really might effect. Considerable progress was accomplished in this work of purification.

Next Meeting.

The Congress decided to meet again at the same time and in the same town as the next general International Congress of Medicine. As President of the Association till the next Congress, Dr. Dejace, of *Le Scalpel*, a Belgian journal, was unanimously elected. Dr. Dawson Williams was reappointed Treasurer and Dr. Blondel General Secretary. The Congress was attended by fifty members representing medical journals published in France, Germany, Belgium, Hungary, Spain, Italy, Russia, America, several other countries, and of course Great Britain. Altogether it was a very successful gathering, and though but few questions were taken in hand, they were very thoroughly discussed.

Luncheon Given by the Editor of the "Lancet."

Between the morning and afternoon sitting the Congress was entertained to luncheon by the Editor of the *Lancet* at the Hyde Park Hotel. There were toasts and congratulatory speeches, during the course of which Dr. LUCAS-CHAMPIONNIÈRE alluded to the extraordinary labours of the British medical press during the last two years. They had to fight a powerful party, and had set a gallant example. By defending the material—the financial—interests of medical men, they were upholding the honour and the honesty of the profession. Poverty bred dishonesty, and medical men must be protected from degrading exploitation. The BRITISH MEDICAL JOURNAL, the *Lancet*, and the other British medical organs had, by their united action and their faithfulness, merited the gratitude and the admiration of the entire world.

British Medical Journal.

SATURDAY, AUGUST 9TH, 1913.

THE FUTURE OF BRITISH HOSPITALS.

THE discussion on hospitals in relation to the State, the public, and the medical profession, which was opened by Professor Moore in the Section of Medical Sociology at Brighton and was reported in the JOURNAL of August 2nd, opens out a large question which has hardly yet received that systematic study from the profession in general which it deserves. The ideal aimed at by Professor Moore is "the replacement of our present heterogeneous hospital systems by a properly co-ordinated system with local public control at each district, unified nationally by a public health authority." The phrase "properly co-ordinated" is becoming as blessed as the word Mesopotamia, and immediately arouses a demand for definition. What it means to Professor Moore we may gather when we find him going on to say that he sees the beginning of a movement in this direction in the "applications being made to municipal authorities for assistance from rates in aid of powerful voluntary hospitals," and in the State grants now made to medical schools which were originally founded on a purely voluntary basis. He believes that the National Insurance Act will increase the rate at which the tendency will develop, and mentions as a parallel example of a similar movement, starting in charity and tending towards a co-ordinated national system, the feeding and medical treatment of school children.

By far the greater part of Professor Moore's paper was a vigorous attempt to remove what he regards as two great bugbears in the minds of those who are opposed to municipal or State hospitals—namely, the idea that a national system of hospitals would have the effect of stopping voluntary gifts and charitable bequests to hospitals, and the fear that State support would involve State control. But it is not easy to resist the feeling that there is more in these beliefs than Professor Moore is inclined to allow. He is no doubt correct in arguing against the idea that "charity, and brotherly feeling, and compassion for the suffering and friendless will disappear from amongst us because a national system of hospitals is established," but surely that is hardly the form in which the objection has been put. It is rather that such charitable instinct as must from its very nature find an object for its energies will be diverted from the hospitals into other channels.

Professor Moore himself acknowledged that the operations of the Insurance Act must involve a reduction in charitable donations to hospitals. That this has actually occurred in not a few cases is only too certain; the fact that this decrease is partly due to a misconception as to the scope of medical benefit makes no difference to the argument. When the Insurance Act was passed the idea arose that medical benefit would include hospital treatment, or that the funds of the hospitals would in some way benefit directly. The thought was at once suggested that if the insurance funds, assisted by the State, were available to help the hospitals, the need for charitable donations was no longer so urgent. The idea was due to a misconception as to the scope of medical benefit, which includes nothing in the nature of a hospital benefit; and as this fact has become more widely recognized, many donations which were for a time withheld have been continued.

But the fact remains that the mere suspicion that the hospital treatment of insured persons would be paid for out of insurance and State funds was sufficient to reduce charitable donations to the hospitals. There are practically no charitable donations to municipal fever hospitals or Poor Law infirmaries, because it is felt that the public rates supply, or ought to supply, everything that is necessary, even including the most expensive apparatus, which Professor Moore thinks might be provided by private donors, such as *x*-ray apparatus, radium installations, and elaborate operating theatres. In both these cases there have been three stages: first, an early stage, when the movement entirely depended on charity; next, an intermediate stage, when State or rate aid commenced, at first sparingly so as to encourage and assist charity, then more and more abundantly, till the third stage was reached, when the State or municipalities supplied practically all that was needed, and charity sought new fields for its energies. The tendency is, indeed, to go even further, as is shown in the case of the fever hospitals, to a stage when not only are these hospitals entirely rate-supported, and charity entirely diverted, but the treatment is claimed and very generally given without any payment by the patients; and we are well on the way towards this condition in respect of the medical treatment of school children and the sanatorium treatment of tuberculosis.

But concurrently with these changes the control of the institutions is modified. Professor Moore looks forward to a hospital system in which "State, municipality, and private donor will combine to aid one another in the evolution of the best, and their united best will be better than that of any one of these forces acting alone, or all three acting separately as they do at present." He gives as an instance of this happy combination what is now being done in connexion with the universities. But ought we not to look still further forward, or to instances where the evolution has followed the other line, to the Poor Law infirmaries or fever hospitals, or to what has happened with regard to elementary education? None of these any longer needs charity, and they are wholly maintained by public funds, and as a necessary consequence they are wholly controlled by public authorities.

The universities, in fact, do not afford a true analogy. The history of the older universities in Great Britain is one of growth and development to meet the varying needs of succeeding ages, a development rendered possible mainly by pious founders whose benefactions were safeguarded and regulated by the State. The newer universities owe their origin to voluntary effort sanctioned and blessed by the State, which now makes annual contributions towards their maintenance, and these are, in some instances, supplemented by the municipalities. But in all countries, even those in which its contributions constitute the major part of the income of the universities, the State has always respected their autonomy. There is thus

full scope for the happy combination of State, municipality, and private donor, where the predominant control remains with the governing body of the university called into existence and maintained by the co-operation of these several agencies.

There is little or no ground for believing that the development in respect of general hospitals will take place along these lines. The universities, no doubt, must retain or attain a large measure of control over the administration of teaching hospitals, and this aspect of the matter appears to have received little attention during the discussion in the Section. But, with this exception, it seems certain that, if and when State or rate aid is given systematically to hospitals, the demand for more and more assistance, on the ground that hospital treatment meets a public need, will grow. In proportion as the response to this demand increases the experience of this and other countries proves that charity will be diverted to other objects.

The Section was greatly indebted to the writers of several excellent and most interesting papers on the German hospitals. The outstanding conclusion to be drawn from these papers is that in Germany the aid given by the State and municipalities is the predominant element, with—as a direct result—control of the hospitals by the State, there being "complete rules enforced by the State in respect of the planning and equipment of the hospitals." The effect on charitable donations has been just what might be expected, for Dr. Grober stated that "regular charitable gifts to hospitals do not exist in Germany except in a minor degree." Thus Germany appears to furnish a practical example of what Professor Moore argues will not occur in this country. That stage has been reached in which State and municipal support has largely diverted charity from the hospitals into other channels. In France the position is very similar. In Germany we are told the majority of the private hospitals are openly and frankly to a large extent commercial enterprises, and no homogeneous and co-ordinated general hospital system has been evolved. Dr. Gibbon, in summing up the position, said that "the conditions in Germany cannot be said to be wholly satisfactory." The nearest approach to co-ordination in that country is in respect of the national movement for the treatment of tuberculosis, which is quite separate from the question of the general hospitals both in Germany and in this country.

In the remarks here made the great question whether complete nationalization or municipalization of the general hospitals is desirable or not has hardly been touched. It has been simply argued that State aid to the hospitals involves alienation of charity to other purposes and increase of State control in exact proportion to the aid granted. Whether this is desirable or not is a question which the British Medical Association has as yet scarcely considered, although there would seem to be among the general public a distinct tendency towards regarding it as both desirable and practicable. Something may shortly be learnt from the newly-organized crusade against tuberculosis which, with State supervision and co-ordination, is more or less under the immediate control of the county and county borough councils, with the tuberculosis dispensaries as the central co-ordinating units in each district. We say more or less, for the position of the County Insurance Committees in this respect is in many districts ill defined. If after sufficient trial this succeeds, it may possibly suggest a system which it will be sought to extend to the general hospitals.

Seventeenth International Medical Congress.

MEDICAL PROGNOSIS.

PROFESSOR CHAUFFARD'S masterly Address in Medicine to the International Medical Congress, printed on another page, gives in the happiest way a sketch of the rise and growth of the art of prognosis. We say "art" advisedly, for the best physician in the world cannot yet reduce this art to expression in the cut and dried terms of a science. As Professor Chauffard pointed out, the "imponderables" of medicine may be perhaps among the most important of the elements that go to the making of a successful prognosis. All the minutiae have to be considered, often suggestions rather than observed facts, apparently trifling details, indications that the coarse thumb and finger of even the best of us may well fail to plumb (if one may plagiarize a well-known poet), and so pass over in making up the main account.

Prognosis is, indeed, more important at the present day than it ever was before. Ever since there have been sick patients and medical men to relieve them, the two outstanding questions to be put and answered have been always the same: What is to be the treatment? Will a cure be effected? It is only in comparatively recent times—within the last hundred years, one may say—that any third question has been as commonly or as imperatively put, either by the patient to the physician or by the physician to himself, and that question is: What is the diagnosis? At the present time, as Professor Chauffard points out, this third question is put first, and rightly so. Logically speaking, diagnosis must come first. Logic has triumphed, as every good Frenchman must wish that it should; the modern idea is to define in the case of each particular patient the mutual relationship between the three fundamental elements of medical judgement—to know, to foresee, to act. The physician's course thus tends to become more and more rational and systematic; we see before us the passing from an art to a science.

The modern era begins with the pioneers who invented the methods of physical diagnosis in daily use at the present time, and who placed unseen internal organic lesions on the same line as manifest surgical diseases with regard to diagnosis. Their efforts gave rise to "organicist medicine," the art that detected the morbid lesion in the living subject, identified it in the cadaver, and deduced therefrom the diagnosis and prognosis of the disease from which the patient had suffered. This system marked a great step forward, but reached its limits of development in fifty years. It contained a large share of truth, but also a narrow doctrine that tended to confuse the anatomical lesion with the disease that produced it. The next stage in the growth of prognosis was attained thanks to the work of Claude Bernard, most wide-minded of physiologists, who taught that disease was but a disturbance of normal processes. As a result, physicians learnt to reason and to act as physiologists, or better still (and later) as biologists. Clinical medicine joins hands with experimental pathology, and we aim at gauging accurately the functional value of the various tissues, the organic reactions of defence, the compensatory reactions, that take place in the human system when it is attacked by disease. It is needless to add that much still remains to be learnt here; countless

researches have shown us how much remains unknown as well as how much sure knowledge we have acquired. But we may feel assured that we are on the right path, and that the broader views that now obtain in medicine cannot but assist its progress forwards. Advances in diagnostic technique are nothing less than advances in the art of prognosis.

Professor Chauffard very rightly lays stress on the wide views of prognosis that the modern physician has to take. Time was when a disease cured had no morrow. Nowadays we know better, and at the present time the remote prognosis is not a whit less important than the immediate prognosis, with the pronouncement of which the early Victorian practitioner was perforce content. In the rheumatic fever of children, for example, the immediate prognosis need cause little alarm, for the child rarely fails to recover from the fever. But the remote prognosis is of infinitely greater importance, for how many are the luckless children crippled for life by an attack of rheumatic endocarditis! Not less important is the remote prognosis in cases of syphilis and tuberculosis, and many another of the ills that vex mankind. Taking a still wider view, Professor Chauffard exhibits the development of prognosis as it affects the family of the patient, the society in which he moves, the community of which he is a unit, and even the race to which he belongs.

Yet when all is said and done, we still find ourselves brought back to the methods and wisdom of Hippocrates to a surprising extent when we come to give a prognosis. "The best physician appears to be the one who knows how to know beforehand," says the first sentence of that author's book on "Prognosis"; the body should always be considered as a whole, the art of prognosis lies in the study of the signs of disease, the power to estimate their relative values. Hippocratic medicine thus placed itself from the first at the very centre-point of knowledge, and has taught us much of the medical wisdom that we have while giving us nothing that we need to discard.

Unceasing progress has been made during the last hundred years; prognosis has advanced enormously, becoming the corollary and practical application of diagnosis. It may be described as the synthesis of medical criteria. Dominating the whole question of prognosis there remains our power to gauge the recuperative powers of the patient; has he in him the resources necessary for overpowering his disease? How much can his organism stand, and how much can we expect of it? That is the great problem that commands and includes all the others. Are we always able to solve it? Says Professor Chauffard—I fear not.

Yet although, as may be seen, he ends on this despondent note in cold print, his brilliant address cannot but have left the great audience in the Albert Hall with quite a different impression. For presenting an ordered, finished, and conclusive account of even so vast a topic as "medical proguosis," no other modern language is the equal of French. And no other modern language is the equal of French for a speaker who has Professor Chauffard's gifts as an orator. But few of those who were so fortunate as to hear him deliver his address can have gone away from it without the notion that they had little left to learn upon its subject, without the sense of satisfaction that comes with the feeling that a familiar and oft-recurring problem has now at last been solved.

NOTES.

Opening Ceremony.

The Congress was formally opened in the name of the King by H.R.H. Prince Arthur of Connaught, at a huge meeting in the Albert Hall on Wednesday, at 11 a.m. The hall was crowded, and there were spectators even in the upper gallery. Space had been reserved on the floor for officers of sections, but owing to the crowd many of them probably failed to reach the space allotted to them. Prince Arthur of Connaught read an address in the name of the King, which is reported elsewhere. He was followed by Sir Edward Grey, who spoke in the name of the Government and of the country at large. He was followed by the President of the Congress, Sir Thomas Barlow, who delivered an address, which is published at page 285. The address was commendably brief, yet comprehensive. After reference to the giants who had taken an important share in the International Congress of Medicine in London in 1881—to Paget, the President; to Huxley and Virchow, who delivered addresses; to Pasteur, then in the zenith of his fame; and to Koch, near the beginning of his great career—the President rapidly reviewed the directions in which medicine and surgery had made greatest progress in the interval, and concluded with an optimistic outlook on the present and the future. The address was characterized by the simplicity, directness, and impartiality which we have come to expect from Sir Thomas Barlow.

The Numbers.

The number of members of the Congress is not at present exactly known, but it cannot be far short of 7,000. In this number are included many women members of the profession, but in addition there are a large number of ladies, probably another 5,000 to 6,000, who are accompanying the male members of the Congress. The badge of the Congress is a bronze medal suspended by a dark blue ribbon. On the obverse of the medal is an allegorical figure of Science gazing on the rising sun; the encircled legend is "XVII INT. CONG. MED. LOND. MCMXIII." The reverse is a portrait of Lord Lister. The public interest in the Congress, as shown by the space devoted to its proceedings by the daily press, is very considerable, and the *Times* is no doubt right in asserting that this interest is quite extraordinary, if not unprecedented. London is so big that it can swallow up 12,000 visitors without any obvious disturbance of its usual routine; but during the last few days the Congress badge has been very much in evidence, not only within the precincts of the Congress, but in all parts of western London.

The Government Banquet.

The dinner given by the Government in the name of the country to some five hundred guests at the Hotel Cecil on Tuesday evening was in every way very successful, except that, unfortunately, Lord Morley, who presided and proposed the toast of "The Seventeenth International Congress of Medicine," was not well heard; this was the more unfortunate since his speech was full of matter, as may be judged by the report published elsewhere. The toast was acknowledged by Sir Thomas Barlow, speaking as President of the Congress, by Professor Landouzy, Dean of the Faculty of Medicine in the University of Paris, and by Surgeon-General von Schjerning, Director of the Medical Service of the German Army. This concluded the speeches, and the company separated at an early hour.

The Pathological Museum.

In the Imperial College of Science there has been brought together a striking collection of specimens which illustrate what is being done by workers in different parts of the world. The general idea of the small committee under the chairmanship of Professor Arthur Keith, aided by that

most experienced organizer, Dr. Armit, was to illustrate the advance made in each branch of medicine; to fulfil such a scheme was not wholly feasible, but the collection is very comprehensive. It would be impossible now to describe the various exhibits in detail, but a cursory view of the whole shows that specimens illustrating the work of the hygienists, of the surgeons, and of the clinical pathologists include examples of the various trade diseases in our own country, striking illustrations of the effective uses of radium on the Continent and of plant pathology in the United States, of the progress of the tuberculosis work and of the cancer research. Contributions have come from all parts, and praise is due to those Continental and overseas workers who have taken the trouble—and this in some cases must have been great—to transport so many beautiful and valuable specimens. The museum of dermatology and syphiligraphy and of otology were separated from the general museum. A novel feature was a special department of museum technique, which treated of the various methods of preparation and mounting, of housing and displaying, and of museum teaching. This instructive exhibit has been arranged largely by the International Association of Medical Museums, under the able administration of Dr. Maude E. Abbott. Many of the specimens will be demonstrated at the sectional meetings, but many must remain in the museum. We would advise all to spare some time from the manifold exactions of such a week to pay a visit to this department, and at least to possess themselves of the catalogue which Mr. H. W. Armit has carefully compiled in English, French, and German.

A Bibliographical Collection.

Among the exhibitions arranged in connexion with the Congress special mention should be made of one organized by the British Museum. It consists of MSS. and printed books, illustrating the history of medicine, which fills six of the large showcases in the King's Library. Among the Oriental MSS. are a facsimile of the Bower Sancrit MS. of the fourth century, and a selection of Arabic and Persian MSS., including the earliest Arabic MS. in nashki in the museum. There are also Arabic translations of Galen and Dioscorides, the latter with fine coloured drawings and MSS. of Ibn Butlan in Arabic and Persian, the last the oldest Persian MS. in the Museum. There are two Greek MSS., an anonymous work on a papyrus of the 1st and 2nd century and a 13th century Galen; these are followed by two fine Anglo-Saxon MSS. The remaining MSS. illustrate the medical history of the Middle Ages and English medicine of the 16th and 17th centuries.

The Sections.

Though the majority of the Sections did not commence work until Thursday, some of them began their labours on Wednesday afternoon. Among these were the Section of Physiology, which was opened by Professor Sir Edward Schäfer at 2 p.m.; the Section of General Pathology and Pathological Anatomy; the Section of Surgery; the Section of Ophthalmology, and the Section of Neuropathology, where Sir David Ferrier gave a short address. The Section of Radiology was opened by the president, Sir J. Mackenzie Davidson, with an address, which was followed by the reading of various papers. The other Sections which commenced their work on Wednesday with the reading of independent papers were those of Otology, Stomatology, Forensic Medicine, and Naval and Military Medicine, and the Subsection of Orthopaedics. The Section of Dermatology and Syphiligraphy was opened in the Governors' Hall of St. Thomas's Hospital by Sir Malcolm Morris by an introductory address. Sir William Osler, president of the Section of Medicine, gave a dinner, attended by some two hundred guests, to the introducers of the discussions, readers of independent papers, and officers of that Section on Wednesday evening, and the members of the Section of Urology were entertained at dinner by Mr. Hurry Fenwick.

Physiology.

The Section of Physiology was opened on Wednesday afternoon by a short address of welcome given by the President of the Section, Sir Edward Schäfer. It was, he said, only right and proper that there should be a Section of Physiology in this International Congress of Medicine, for the advance of medicine was very intimately bound up with the advance of physiology. Not only was physiology of service to medicine, but medicals could help the advance of physiology by correcting the views and statements made by ignorant people on experiments made on animals. Unless these experiments, which in the past had yielded splendid results both for physiology and medicine, were allowed to go on, and unless every facility were given for the carrying out of scientific research, the practice of medicine must suffer in the end. A resolution on the importance of experiments on animals had been drawn up and would be submitted to each Section of the Congress. He put the resolution to the Section, and it was carried unanimously in the following form:

> That this Section records its conviction that experiments on living animals have proved of the utmost service to medicine in the past and are indispensable to its future progress. That accordingly, while strongly deprecating the infliction of unnecessary pain, it is of opinion, alike in the interests of man and of animals, that every facility should be given to competent persons for the performance of such experiments under adequate supervision.

Sir Edward Schäfer sketched the future arrangements of the Section, drawing particular attention to the series of laboratory meetings which had been arranged, meetings at which actual demonstrations of experiments of interest and of value to physiologists would be given. Following Professor Schäfer's address, two papers were read. Dr. Fraser Harris, of Dalhousie University, Halifax, read a paper on the existence of reducing enzymes in animal tissues. He gave a short history of the previous work in this direction, particularly as regards the methods which had been employed. The question to be decided was whether the decolorization of prussian blue which was noted after the injection of this material into living tissues was due to the presence of an enzyme in the tissues or to some chemical change in which a ferment played no part. He described his own experiments, as the result of which he had come to the conclusion that the active agent was a reducing enzyme present in the tissues. At the same time he admitted that the various alkaline salts of the tissues did also play a part, he believed, simply as adjuvants to the enzyme. Dr. Vernon of Oxford then read an interesting paper on changes in the reaction of growing organisms to narcotics. He gave a short account of some previous work by Traube on this subject, in which the view was advanced that the changes noted were due to simple physical conditions. Dr. Vernon could not agree with this conclusion. He believed that the changes noted bore some direct relation to the cell lipoids. His work was carried out on tadpoles of varying ages—from 2 to 83 days—immersed at a constant temperature into the different test solutions. In one long series of experiments carried out with alcohols he found some remarkable alterations. Thus, when young tadpoles were introduced into a solution of methyl alcohol they required relatively a high concentration before narcotization, the concentration necessary falling as the age of the tadpole increased. With ethyl alcohol the same result was found. Propyl alcohol required the same concentration throughout. With butyl and amyl alcohols, instead of a fall in concentration being sufficient to narcotize the older tadpoles, a distinct increase was necessary—in other words, there was a reverse action. This reverse action was most definitely shown in the case of

octyl alcohol, the last of the series he employed, where double the concentration of alcohol required to induce narcotization in all the young tadpoles was necessary to narcotize the old specimens. Similar results were obtained when, in place of alcohol, urethane was employed. He also tested other narcotics, such as chloroform, chloral hydrate, paraldehyde, etc., and again obtained results which, in his opinion, could not be reconciled with any physical explanation. He also carried out a series of experiments on the lethal concentrations of alcohols and found again great variations between the young and the old tadpoles, thus with octyl alcohol the ratio between the narcotomy and lethal action was 1 to 55 in the young tadpole, whereas with the older specimens it fell to 1 to 65. Dr. Vernon could not state to what these differences found between the old and young tadpoles were due, although he thought it possible that alterations in the composition of the nervous tissues during growth did play an important part, he was not sure if they played the sole part. He thought it probable that changes in the solubility of narcotics with advancing age occurred, although he admitted that there was no direct experimental proof available. His paper was criticized by Professor B. Moore (Liverpool), who thought that too much stress was laid at present on the lipoids and the part they played, and by Professor Macallum (Toronto) who did not feel sure that Dr. Vernon's results sustained altogether the lipoid hypothesis. He thought that too many assumptions were made in connexion with physical explanations.

SURGERY.

THE proceedings of this Section were opened on Wednesday, when the President, Sir W. Watson Cheyne, in welcoming the members of the Section, contrasted the conditions and scope of surgery in 1881 with the position to-day. The Congress of 1881 coincided with the disappearance of the old system and the beginning of the new era in surgery; its scope had been enormously enlarged and that of medicine correspondingly somewhat narrowed, but he thought it possible that in the future the rates of progress would be reversed. He paid a warm tribute to Lister, whose master mind, he said, full of love for humanity, had brought life and health and rejoicing to all nations. Eloquent tributes to the memory of Lord Lister were also paid by M. Lucas-Championnière (Paris), Professor von Eiselsberg (Vienna), and Professor Bloch (Copenhagen). A paper was then read by Dr. G. Le Filliatre (Paris) on spinal and local anaesthesia, which led to a spirited discussion. A paper contributed by Dr. Russell S. Fowler (Brooklyn) on the elevated head and trunk position in the surgical treatment of abdominal lesions was read for him by Dr. J. O. Polak. He advocated the Fowler position in acute septic peritonitis to ensure drainage from the upper and more dangerous area of the abdomen into the lower and less dangerous. Dr. Waters F. Burrows, of New York, discussed post-operative intestinal stasis, and advocated the introduction of sterilized liquid petroleum into the abdominal cavity to prevent adhesions. This plan, he said, had been recommended by Dr. Wilkie, of Edinburgh, and by others, but Dr. Burrows advised that much larger quantities, up to six or eight ounces, should be employed. Dr. Edward Archibald, of Montreal, in a paper on the causation of pancreatitis, described a small sphincter muscle at the mouth of the duct the resistance of which might be overcome, the reflux of bile then leading to inflammation of the pancreas. He indicated some of the suggestions for treatment arising out of these observations. The committee of the Section has made arrangements to enable members of that Section to see operations at the different general hospitals during the Congress week.

ORTHOPAEDIC SURGERY.

THE session of the Subsection, Orthopaedics, of the Section of Surgery was opened on Wednesday afternoon by the President, Mr. Robert Jones, of Liverpool, with a few words of cordial welcome. Some thirty members attended, among them being some of the best-known orthopaedic surgeons, including Drs. Kirmisson, Denucé, Max Boehm, Galot, Albee, Mencière. Dr. Mencière, speaking with great rapidity and with characteristic vivacity, described the four surgical procedures with which his name is associated — "pneumatic osteotomy" by means of his "revolver" osteotome, enucleation of the bony centres in the tarsus subcutaneously, injection of carbolic acid for tuberculosis of the bones and joints, and reduction of congenital dislocation of the hip by means of his lever. The pneumatic osteotome certainly should have a place in the surgical outfit of hospitals; for, owing to the complete control which the operator has over it, section of the bone can be performed with much more precision and neatness than by mallet and chisel. The results of enucleation of tarsal bones appear to be good, though not better than those attainable by other methods; but the proceeding has the merit of simplicity and safety. Dr. Mencière's results in the treatment of tuberculous joints by injection of a solution of carbolic acid into the bones and epiphyses, either subcutaneously or by open operation, seem to be excellent, for he claims a movable hip as a not infrequent result in coxalgia. The lever for the reduction of hip dislocation gives the surgeon more power, and consequently greater control, at the same time that it removes the strain from the shaft of the bone to the trochanter. This paper was well illustrated by over a hundred photographs shown on the screen. There was no discussion of it, perhaps because it was not closely followed by many of the audience. Dr. Denucé, of Bordeaux, in a short paper, described certain cases of sciatic scoliosis, and discussed their doubtful pathology and the probability of a tuberculous etiology, although *x* rays show little definite change. Dr. Hans Spitzy (who spoke excellent English) had had excellent results in such cases by rest. Dr. Max Boehm, of Berlin, also speaking English, referred to his researches among pathological specimens and to the frequency with which osteo-arthritic changes occurred in such cases. Dr. Torrance Rugh, of Philadelphia, agreed with him, and spoke of the value of carbolic acid injection around so-called rheumatic joints, followed by immediate massages and repeated after five days' interval. The next paper was a short one by Mr. Tubby, in which he described a method of treating old scars by multiple subcutaneous division and rubbing in of thiosinamin solution, the operation being repeated as often as necessary. For Dupuytren's contraction of the palmar fascia he advocated open operation and the instillation and injection of thiosinamin. These proceedings had given him good results, but open operation on the fingers themselves was inadvisable, and he preferred to insert a tenotome into the mass of fibrous tissue and having by turning it about well stirred up the tissue, then to inject thiosinamin. Dr. Rugh said that he had obtained good results in keloid by giving thiosinamin by the mouth. Then Mr. Elmslie showed a number of slides which excellently illustrated the various kinds of coxa vara in infants and adolescents, and referred to the best method of treatment. Dr. Albee, of New York, strongly advocated a position of inward rotation of the thigh combined with abduction in coxa vara and in fracture of the femoral neck, but in early cases he thought open operation was to be recommended. Dr. Peltesohn, of Berlin, also commented on Mr. Elmslie's paper, and with a short paper by Mr. Bankart on scoliosis of neurological origin the session ended for the day. The members of the Subsection dined at the Royal National Orthopaedic Hospital as the guests of the Earl of Denbigh

and members of the committee of the Section and the honorary medical staff of the hospital.

Ophthalmology.

At the opening of the Section of Ophthalmology on Wednesday Sir Anderson Critchett expressed his profound regret at the death of Sir Henry Swanzy, whose place in the office of President of the Section he had taken. He referred to some of the methods useful in ophthalmology introduced since the Congress in 1881, alluding especially to the bacteriology of the conjunctiva, the Wassermann reaction, the value of the *x* rays, especially for the localization of foreign bodies, and to the importance of the new observations on the functions and tumours of the pituitary body and to the important part played by sinuses in certain forms of ophthalmic disease. He mentioned that thirty years ago Mr. Henry Power had recorded certain cases of papillitis which had recovered rapidly on the removal of carious fangs, and observed that there was now a fuller understanding of the association of diseased conditions of the gums and alveolar processes with certain forms of eye disease. He also touched upon the great value of local anaesthetics in operations for senile cataract, on the use of the galvanocautery in diseases of the cornea, and on the action of adrenalin in controlling haemorrhage in ophthalmic operations. The debt due to Sir Almroth Wright and his fellow workers for the introduction of vaccines designed to increase resistance against inflammation, especially chronic inflammation, was, he said, great; and, after a brief review of some of the new remedies introduced, including carbon dioxide snow, he concluded by a reference to the great value of radium in the treatment of spring catarrh.

Dermatology.

The first meetings of the Section of Dermatology took place in the Governors' Hall, St. Thomas's Hospital, where, on Wednesday afternoon, the President, Sir Malcolm Morris, K.C.V.O., reviewed the progress of dermatology, referring in particular to the advances resulting from the researches of Koch, Schaudinn, and Hoffman. He mentioned the therapeutic use of the *x* rays, of radium, of carbon dioxide as a freezing agent, and the introduction of salvarsan by Professor Ehrlich. The understanding of the pathology of skin diseases, he said, had been greatly assisted by bacteriology, and in this connexion he made special reference to the work of Sabouraud (Paris) in isolating and classifying the numerous kinds of fungus responsible for ringworm and allied diseases of the scalp and skin. In conclusion he appealed to all members of the Section to urge upon their respective Governments the imperative necessity of taking systematic and vigorous action for attacking venereal diseases, a question which, in its relation to public health, would be the subject of a joint discussion with the Section of Forensic Medicine.

Stomatology.

The proceedings of the Section of Stomatology were opened on Wednesday at the Royal Dental Hospital, Mr. Morton Smale presiding, and Mr. J. F. Colyer acted as Secretary. Messrs. J. G. Turner and F. J. Bennett read a paper on caries observed in ancient Egyptian teeth obtained by Professor Flinders Petrie from cemeteries of the 26th to 30th Dynasties, about 3,000 years ago. Numerous cavities not *post mortem* or due to fractures, but the result of dental caries, were found. A comparison with modern teeth showed that the cavities were of the same nature and that the same parts of the teeth were affected—namely, the fissures of the crown and the interstitial surfaces. The jaws from which the teeth came were well formed and the dental arches practically free from irregularities. Of 435 teeth examined, 16.78 per cent. were found to have carious cavities. It was noted that the cavities occurring interstitially were not situated at the point of contact with the adjacent tooth, as is usually the case with modern teeth, but occurred at a point near the edge of the gum where the tooth was not in contact with its neighbour. The percentage of caries, although high, is much lower than the percentage of to-day, which on a fair average may be taken to be 52 per cent. This better condition was probably due to the feeding habits of the people. Bread was made from coarsely ground cereals, often badly cooked; after a meal coarse débris was left in the mouth, and could only be forced into spaces large enough to receive the particles. Interstitially the particles must have been forced between the neck of the teeth, pushing aside the interdental papilla, and this probably accounted for the occurrence of caries at this site. Nowadays flour is so finely ground that it forms a sticky mass, the particles of which can be forced into the slightest crevices; stagnation is greater, and fermentation therefore increased. Although honey was an important article of diet among the Egyptians, yet the consumption of sugar was probably far less than it is to-day. The conclusion arrived at was that the comparative absence of dental caries among the Egyptians was due to the coarse nature of the cereal food, and that the frequency of dental caries among ourselves is due to finely ground flour. Dr. Trewby King (New Zealand) remarked that among the Maoris who were untouched by civilized influence caries was extremely rare, the food chiefly used being coarse and needing prolonged chewing; but among the Maoris who had adopted civilized customs of living caries had rapidly increased. Dr. Zilz (Hungary) read a paper on the entrance of tubercle bacilli into the exposed pulp of teeth. He found the organisms present in carious dentine; an emulsion of such dentine was injected into the peritoneal cavity of guinea-pigs, and he was able to recover organisms which gave the typical staining reactions of tubercle bacilli. Mr. Goodby (London), while agreeing that Dr. Zilz had certainly demonstrated tubercle bacilli in dentine stated that had himself hitherto failed to cause tuberculosis in guinea-pigs by injecting an emulsion of carious dentine. Mr. J. H. Gibbs (Edinburgh) read a paper on polyphyodontism (multiple dentition) in a child of 2¾ years. There was a tumour present on the right side of the mandible extending from the angle to the corner of the mouth. From a circular opening on the gum projected the crowns of a geminated deciduous lateral incisor and canine. All the deciduous teeth were present. On incising the tumour it was found that below the two deciduous molars were two other rows of teeth. The top row was formed by the first or second deciduous molars; between the roots of the first molar is a cup-shaped piece of bone, which was obviously the crypt of a permanent premolar. The middle row consisted of the geminated lateral and canine, first and second deciduous molars fully formed, and the crown of the first permanent molar. The third row consisted again of first and second deciduous molar and the crown of the first permanent molar. Sections of soft tissue underlying the second molar of the third row showed an epithelium closely resembling the cells of the enamel organ. The case appears to be quite unique, and is the first case recorded of a placental mammal with definite calcification of more than two sets of teeth. Mr. J. G. Turner (London) suggested the possibility of the case being one of polygnathism rather than of polyphyodontism. Mr. K. W. Goadby read a paper on the bacteriology of pulpitis, founded on a research in which he had had the assistance of Mr. A. Barrett. Streptococci had been found in gangrenous pulp, but hitherto the bacteriology of an inflamed but living pulp had not been

investigated. They found that in the superficial layers of the carious dentine cocci of different types were chiefly present; in the deep layers streptobacilli were found, together with curious thread-like forms which grew for a limited time under anaërobic conditions. No organisms were found in the pulp itself when the latter was not exposed. Dr. Lorgnier (Calais) read a paper on the importance of radiography in stomatology.

Transport of Wounded in Mountainous Country.

The meeting of the Section of Naval and Military Hygiene, on Wednesday, was opened by the President, Sir Launcelot Gubbins, Director-General Army Medical Service, who, in welcoming the delegates from foreign countries, briefly referred to the Congress of Medicine held in London in 1881, when the subjects which chiefly occupied the minds of naval and army medical officers were the antiseptic treatment of wounds and the effects of the then recently introduced small-bore Martini-Henry rifle bullet. Aseptic surgery in the field was not mentioned or apparently thought of at the time. It was interesting to note that the wounding effects of the Martini-Henry bullet were then considered to be less severe than those of the old spherical smooth-bore bullet and of the larger Snider bullet; similarly at the present time opinion seemed to regard the sharp-pointed bullet used by the Turks in the recent campaign as more merciful than the ogival-pointed bullet used by the Balkan States. Colonel Skinner, M.V.O., read a paper on the transport of wounded in hill warfare, prepared by officers of the Indian Medical Service and presented by the Director of Medical Services, India. The paper contained a review of the different forms of transport for wounded employed in the Indian frontier campaigns during the last forty years. One conclusion drawn was that where it can be employed the dhoolie is undoubtedly the most comfortable way of carrying a helpless patient, as it is practically a bed in which he can lie, for days if necessary, till he reaches a stationary hospital. By drawing the curtains at night it forms a good *tente d'abri*. Unfortunately it is heavy—some 92 lb.; the pole is too long to permit of its use in mountain paths with sharp turns, and it requires specially trained bearers, who are not easily procured. It was pointed out that the ordinary stretchers could not be employed on a steep hillside, as the rear bearer could not see where he was placing his feet and frequently stumbled or fell. The patient, too, must be strapped on to the stretcher. The most satisfactory form of transport was one of the contrivances used by the inhabitants of the locality. Among these were the chair or sling, in which the patient is carried by a single bearer on his back—as, for instance, the Assam carrier chair. In the Tibetan expedition the Aldridge hammock, a blanket suspended from a pole, was found satisfactory. Lieutenant-Colonel E. Nienhaus (Switzerland) read an interesting paper on the same subject, based on his experience in manœuvres with the Swiss army. He began with a short sketch of the Swiss army medical organization and the medical echelon in mountain warfare. He pointed out that in this class of fighting it was especially necessary to apply the dressings carefully in the first instance, as a long delay might be unavoidable before the patient could be conveyed to any kind of stationary hospital. In the actual conveyance of a wounded man he was strongly impressed with the advantages of the Weber stretcher, as used by the Swiss bearer companies. This stretcher is made in two parts; each bearer carries one-half on his back in place of a knapsack. Any two men, he said, could thus form a stretcher and carry a wounded man, if the nature of the country permitted it. Six stretchers, together with a large supply of dressings, could also be loaded on a pack saddle. Another ingenious stretcher described was the Fröhlich wheeled stretcher. It was, the speaker said, a folding stretcher which could be carried on a man's back. The handles could be turned up, permitting the stretcher to be used like a wheelbarrow, or five to six stretchers could be coupled together to form a train which was drawn by a horse. Where the slope was very steep the handles could be turned downwards, when they acted as runners, and at the same time as a brake; in the latter case the bearer walked behind the stretcher, and by means of a rope fastened to it guided its course and regulated its speed. At the conclusion of his paper Lieutenant-Colonel Nienhaus showed a series of pictures on the screen, illustrating the various ways in which the stretchers had been used during manœuvres by the Swiss bearer companies. Professor von Wreden, Surgeon to H.I.M. the Czar, expressed his admiration for the ingenious appliances described by Lieutenant-Colonel Nienhaus, but stated that as a result of his experience in the Russo-Japanese war he thought that the collection of wounded during fighting should be abandoned. This practice only led to the useless slaughter of bearers and patients. When the fighting was over wounded could be quietly collected and dressed, and it was not therefore necessary to be equipped with an elaborate supply of appliances for the rapid collection of wounded. Colonel P. Hehir, I.M.S., said that in collecting wounded during fighting in hill warfare, the means of transport used by the inhabitants of the locality should be studied, for they knew from experience the best methods to use. By adapting these to suit the comfort of a helpless patient a satisfactory solution of this difficult problem could always be found.

Radiology.

The Section of Radiology is a newcomer in the programme of an International Congress of Medicine, but it proved a lusty infant, and as many as 200 members must have been assembled in the Geological Theatre of the new School of Mines on Wednesday afternoon, when the session was opened. The French workers in this branch of medicine were particularly in evidence, perhaps the best known among them being Professor J. Bergonié, of the University of Bordeaux. The other side of the Atlantic also was strongly represented. A hearty welcome to all and sundry was extended by the President of the Section, Sir James Mackenzie Davidson, who, in a very brief introductory address, pointed out how vast a field had been opened up to medicine by the discoveries of Roentgen, Becquerel, and the Curies. It might be said of radiologists that they employed the minutest vibrations in the ether of space for the diagnosis and treatment of disease. An instance of the increasing value of the *x* rays purely as a method of examination was afforded by the extraordinary precision which was now possible in the localization of foreign bodies, especially in the eyeball and orbit. The stereoscopic picture in this connexion had proved itself of immense service, and although stereoscopy did not enjoy the wide following it deserved, it would ultimately commend itself, he felt sure, in connexion with the fluoroscope, even for the examination of the intestine, with the aid of the bismuth meal. An exhaustive paper was read by Dr. James T. Case, who as roentgenologist at the Battle Creek Sanatorium in Michigan has had large opportunities of studying the *x*-ray intestinal picture. Indeed, one of his American colleagues said of him in the course of the discussion that he was accustomed to sit before the fluorescent screen for eight hours nearly every every day, examining bismuth cases. Dr. Case said that during the last thirteen months he had made a Roentgen examination after a bismuth meal in some 1,500 individuals. Dr. Case's paper, and perhaps even more his lantern demonstration, brought out many interesting points in connexion with colonic peristalsis and antiperistalsis. In the majority of cases in which he had observed antiperistalsis, the picture was that of

successive waves originating in the transverse colon near the hepatic flexure; they had never been seen to proceed clearly to the tip of the caecum, but only to a point corresponding approximately with the ileo-caecal junction. He had seen at one time as many as five antiperistaltic waves between the caecum and the middle of the right half of the transverse colon. Perhaps the most interesting section of the paper was that which concerned the author's observations of incompetence of the ileo-colic valve. He had found this to occur in a certain constant percentage. Out of a series of 200 gastro-intestinal cases, 33 showed this incompetency by the barium clysma. In the light of existing knowledge of the functions of the ileo-colic valve, he thought it reasonable to believe that those cases in which rectal alimentation had proved successful were the cases of ileo-colic valve incompetence. Under ordinary conditions the valve acted as a sufficient barrier, so that any attempts to introduce fluid beyond it, either for diagnosis or treatment, were unsafe and unjustifiable. These conclusions with regard to the ileo-colic valve were supported by Dr. Lewis G. Cole of New York, who said that during the last four years he had recognized about 60 cases of ileo-colic valve insufficiency. In his reply upon the discussion, Dr. Case added the interesting point that although diarrhoea had been considered the cardinal symptom of ileo-colic valve insufficiency, the *x*-ray studies, covering about 250 cases, had shown that, instead of diarrhoea, intestinal—and more especially ileal—stasis prevailed. Three papers were read on radio-therapeutic subjects, the first by Dr. Béclère, describing his technique in the treatment of leukaemia, and the other two, by Dr. J. Belot of Paris, and Mr. C. R. C. Lyster of London, detailing their personal experiences in the *x*-ray treatment of exophthalmic goitre. Dr. Belot considered that it was always to an alteration of the glandular function and of the gland itself that this condition must be attributed, and that the special action of the *x* rays on the glandular elements justified the radio-therapeutic procedure. He used an aluminium filter of 1½ mm. in thickness, and obtained his results without producing any lesion of the skin. Out of 30 cases treated only 5 showed no amelioration, but, on the other hand, only 8 showed a diminution of the goitre, and only 6 a diminution of the exophthalmos. Mr. Lyster, in the course of his paper, said that he was unable to state with certainty the sequence in which the symptoms decreased, but, so far as he had been able to observe, the rapidity of the heart's action was lessened, tremor disappeared, and the general excitability of the nervous system became less marked. He had treated a few patients who were suffering from the disease in the acute form, and in these the vomiting and diarrhoea ceased, the heart's action diminished at once, and the condition generally changed from the acute to the milder type. The two papers initiated an interesting discussion, in which there was a good deal of interchange of experience, favourable on the whole to radio-therapy, though it was suggested that the data were as yet inadequate for a definite conclusion, and that such data as were available were sometimes perplexingly inconsistent.

CONVERSAZIONE AT THE NATURAL HISTORY MUSEUM.

As a finale to the labours of the opening day Sir Thomas Barlow, President of the Congress, acquired in his own person a very practical knowledge of the surgical meaning of passive movement. His experience was shared to some extent by the treasurers of the Congress, Sir Dyce Duckworth and Mr. Makins, and the chairman of the Executive Committee, Sir Watson Cheyne, who flanked Sir Thomas Barlow on either side while he was shaking hands with the unceasing flow of foreign and other guests at a conversazione given at the Natural History Museum. They began to arrive soon after half-past eight, and continued to do so until half-past ten; and meantime this building, despite its size, became somewhat more than well filled by an assembly in which the foreign guests were largely represented. The Royal Artillery band was playing in the central hall, and the Coldstreams band in the west garden, while two concerts were in progress in different rooms of the building. Nor did two large marquees which had been erected in the grounds fail to prove attractive from an early hour in the evening; their walls were lined by refreshment tables, and German beer served in tall, narrow glasses, figured among the beverages provided.

THE EXHIBITION.

To visit the central hall of the University of London this week is to turn back for a moment three pages of the book of life. Once again it is the site of an exhibition of books, drugs, instruments, and medical and surgical appliances of all orders, and its appearance recalls very vividly that which the hall presented in 1910 when a corresponding exhibition was in progress in connexion with the annual meeting of the British Medical Association for that year. Nor is the resemblance superficial, for the stalls are arranged on the same lines as in 1910, and most of the firms which then exhibited are again showing their products. Their total number is some thirty or forty higher than 1910, and this has necessitated bringing into use an additional room on the right of the hall. But, except for this fact and the presence of a few entirely foreign exhibitors, and of a certain amount of evidence that the authorities of the International Medical Congress are somewhat more ready to place stall space at the disposition of any one who desires it, the resemblance between the two exhibitions is very close indeed. In the intervening years, of course, many new preparations and improved appliances have been brought forward, but since most of the novelties were shown by their producers at Brighton many visitors to the present exhibition will possibly not see anything which is really new to them. Nevertheless, no one should fail to include a visit to it in their week's work, for an hour spent at an exhibition of this order is rarely lost. Each of them in its turn bears striking testimony to the ability and enterprise of the modern manufacturer, and each is of practical value to medical men by enabling them to examine for themselves the devices, drugs, and books to which from time to time attention is drawn in our columns. The present exhibition, which was organized by our contemporary, the *British and Colonial Druggist*, is representative of the activities of the day, and will remain open until next Tuesday evening.

INTERNATIONAL ASSOCIATION OF THE MEDICAL PRESS.

IT is the practice of the International Association of the Medical Press to hold a congress in the place of meeting of each International Congress of Medicine, at which various questions directly affecting medical journalism as a speciality—if it may so be called—are discussed. The International Association of the Medical Press during the earlier years of its existence was largely occupied in establishing its position in relation particularly to international congresses of medicine, general and special. Its members at one time found that the facilities afforded to them for prosecuting their very laborious and anxious work were utterly inadequate, although there was an inclination to lay upon their shoulders blame for defects they were unable to avoid or rectify. Matters have been very much improved; the Press Association is now represented on the Permanent Committee for International Congresses of Medicine by its President and Secretary, and the arrangements made on this occasion have been as adequate as circumstances permitted, for to take

time by the forelock by having an address or a paper ready by the prescribed date is not a virtue common among men who devote themselves to medicine and its ancillary sciences. Defects arising from this cause have been counterbalanced in London by the helpful courtesy of the officials of the Congress. Of the proceedings of the Association of the Medical Press itself at its meeting on Tuesday a short account is given elsewhere. The Secretary of the Association, Dr. Blondel, was rewarded for his pertinacity in urging the necessity of a reform in medical terminology that will prevent the multiplication of unneeded and ill-constructed new words, by being authorized to submit his report on the subject to the various national associations for their opinions and criticisms. After these have been digested, the general outcome of the whole will be considered by the Permanent International Committee, which meets annually, and will be in a position to make representations in the proper quarters. The thorny subject of the control of advertisements in medical periodicals was raised by Professor Posner, the editor of the *Berliner klinische Wochenschrift*, who, with Dr. Spatz, editor of the *Muenchener medizinische Wochenschrift*, were among the representatives of the German National Association of the Medical Press. The discussion was interesting, if inconclusive, but the mere fact that the subject has been raised in a well-defined form can only be productive of good. The interval between the morning and afternoon session of the Congress was very agreeably filled by a luncheon given by the *Lancet*, over which Dr. Squire Sprigge, the editor of that journal, presided. The welcome he extended to his foreign colleagues and guests was warmly acknowledged by the retiring President, M. Lucas-Championnière, who complimented the medical press in this country on the unanimity with which it had given utterance to the views of the profession with regard to the national insurance scheme and the solid front it had presented in face of a serious menace.

Royal College of Surgeons.

On Wednesday afternoon the Honorary Fellowship of the Royal College of Surgeons of England was conferred on a number of distinguished foreign and colonial surgeons. The election by the Council took place at its meeting on July 31st. The following is a list of the surgeons thus honoured:

Bastianelli, Raffaele, Professor of Clinical Surgery, Royal University of Rome.
Bier, August, Professor of Surgery, University of Berlin.
Bird, Frederic Dougan, M.B., B.S., Lecturer in Surgery, University of Melbourne.
Crile, George Washington, M.A., M.D., Professor of Surgery, Western Reserve University, Cleveland, U.S.A.
Cushing, Harvey, M.D., Professor of Surgery, Harvard University.
von Eiselsberg, Anton Freiherr, LL.D., M.D., Professor of Clinical Surgery, University of Vienna.
Fuchs, Ernst, M.D., Professor of Ophthalmology, University of Vienna.
Hartmann, Henri, M.D., Professor of Clinical Surgery, University of Paris.
Körte, Werner, Geheimer Sanitäts-Rath, Director of the Surgical Division of the Urban Municipal Hospital, Berlin.
Mayo, William James, M.D., Surgeon, St. Mary's Hospital, Rochester, Minn., U.S.A.
Monprofit, Ambroise, M.D., Professor of Clinical Surgery, School of Medicine of Angers, University of Paris.
Murphy, John Benjamin, A.M., M.D., LL.D., Professor of Clinical Surgery, North-Western University, Chicago, U.S.A.
Nicolaysen, Johan, M.D., Professor of Surgery, Royal Fredericks University, Kristiania.
Oppel, V. A., Imperial Military Academy of Medicine, St. Petersburg.
Shepherd, Francis John, M.D., C.M., LL.D., Professor of Anatomy and Operative Surgery, McGill University, Montreal.
Tuffier, Theodore, Professor agrége de chirurgie à l'Université de Paris.

After the ceremony the new honorary Fellows were entertained at dinner in the College by past and present members of the Council. The list of honorary Fellows of the Royal College of Surgeons previously contained the names of twenty-four distinguished surgeons in various parts of the world. In addition the Earl of Rosebery and Field Marshal Earl Roberts are honorary Fellows.

Medical Notes in Parliament.

[From our Lobby Correspondent.]

Highlands and Islands (Medical Service) Bill.

This bill passed through Committee on Tuesday, July 29th. Express provision was made by an amendment to Clause 1 that it should include "nursing," and it provided in Clause 2 that one of the members of the Board shall be a woman qualified by special knowledge of the work and organization of district nursing. "District nursing associations" also were recognized under Clause 3.

As anticipated in our notes of last week, the Highlands of Perthshire were omitted from the schedule, with the parishes of Balquhidder, Callander, Comrie, Killin, and Kirkmichael. In respect to the districts to which the bill is to apply, the general feeling of the Committee appeared to be that the money provisions were something more than would be really required for the Highlands and Islands, as strictly defined, and that a small addition only would be required to make the provisions of the bill available for other districts in Scotland of such a character as might require them.

Questions in the House of Commons.

The Marquis of Tullibardine asked (1) what was the amount of mileage grant to which the Highlands of Perthshire would have been entitled had they been retained in the Highlands and Islands (Medical Service) Bill; and what increased amount would they now be given, seeing that they had been deprived of the benefits of that bill; and (2) whether the portion of the mileage grant due to Perthshire would be deducted from the Highlands and Islands grant where it originally figured, or whether it would be treated as an additional burden on the £16,000 already allocated to other districts in Scotland.—Mr. Benn said that the amount assigned to the part of Perthshire covered by the special grant-in-aid of £10,000 was £800. In addition, that area would participate in the balance of the grant which had not already been distributed. The scheme of distribution applied only to the present year, and in future years any mileage grant to the area in question would be made out of the mileage fund available for Great Britain generally apart from the Highlands and Islands of Scotland.

The Marquis of Tullibardine asked the Secretary to the Treasury what was the amount allocated to the counties of Inverness, Ross and Cromarty, Sutherland, Caithness, Orkney and Zetland, and Argyll respectively, as mileage grant, how was it proposed to spend the £800 surplus, now that Perthshire had been removed from the Highlands and Islands (Medical Service) Bill; and how was it proposed to reimburse the Lowlands of Scotland for the loss of £800 incurred on their mileage grant by the inclusion of the Highlands of Perthshire in their area.

Mr. Masterman said that the amounts referred to in the first part of the question were: Inverness, £2,310; Ross and Cromarty, £1,560; Sutherland, £490; Caithness, £250; Orkney, £170; Zetland, £700; and Argyll, £1,940. As previously stated, the sum of £800 had been allocated to the area in question for the current year, and the two latter parts of the question did not, therefore, at present arise.

Mental Deficiency Bill.

The Report stage of this bill was taken on Monday, July 28th, and after 11 o'clock on Tuesday, the 29th. The opposition of Mr. Wedgwood and a few other members was maintained, and a very late sitting was held in consequence on both occasions. Sir Frederick Banbury

made some entertaining observations on the medical profession in connexion with the motion that three medical certificates should be required instead of two. He said:

I myself am in favour of the amendment, because I think the power we are going to put into the hands of two men is too great a power for so few hands. If this proposal passes we might have a Ben Allen and a Bob Sawyer of the medical profession giving a certificate consigning a person to what comes to be confinement for a very great number of years. I am the last man to say anything against the medical profession; but it is a large profession, and all the members of it are not animated by the same feelings. Anyone with experience of life and business knows perfectly well that if a witness does not desire to come before the court he has no difficulty whatever in obtaining a medical certificate that the state of his health is such that it is not safe for him to come before the court. Under these circumstances, and in view of the fact that I have shown that the chief arguments of the Under Secretary are gone, I think we ought to have some much stronger argument before rejecting the amendment.

The amendment was rejected on a division by 274 to 24.

No material amendments were made in the bill of special professional interest, and it was read a third time on Wednesday morning at 3.15.

Public Health and Prevention of Diseases Bill.—This important bill passed through Committee as to its first three clauses after the conclusion of the debate on the Insurance Act Amendment Bill on Tuesday, August 5th. The fourth clause, as foreshadowed in our notes in a previous issue, which related to the Metropolitan Asylums Board, was withdrawn, in view of Clause 37, which had been inserted in the amending insurance bill in committee.

Royal Commission on Vivisection.—Mr. Chancellor asked the Secretary of State for the Home Department whether his attention had been called to the fact that Dr. Pembrey, in his evidence before the Royal Commission on Vivisection, stated that he had done painful experiments upon living animals, and that such experiments were absolutely necessary; and, further, that if he caused the animal sufficient pain to produce syncope, the pain itself would act as an anaesthetic; that the Commissioners unanimously reported that Dr. Pembrey's application of theory of pain as a protective mechanism in the scheme of Nature to the case of painful experiments on animals led him into a position in their opinion absolutely reprehensible, and that to grant a licence or certificates to a person holding such views as those entertained by Dr. Pembrey was calculated to create serious misgiving in the minds of the public; and whether, notwithstanding the unanimous opinion thus expressed by the Royal Commissioners, he had renewed Dr. Pembrey's licence and granted him further certificates.—Mr. McKenna said he did not think the question summarized the evidence given by Dr. Pembrey before the Royal Commission. He had considered carefully the shorthand notes of his evidence and the opinion expressed by the Commissioners thereon. He had received from Dr. Pembrey letters repudiating in unqualified terms the opinions which the Royal Commission was led by his evidence to attribute to him, and he had thought it right to renew his licence and to allow some of his certificates to continue in operation. No fresh certificates had been given. Mr. G. Greenwood asked if the Home Secretary disagreed with the findings of the Royal Commissioners that to grant a certificate to this gentleman was calculated to create serious misgivings in the minds of the public.—Mr. McKenna replied that he thought, in view of the misinterpretation that was put upon his evidence, that it was natural to think that the granting of a certificate to that doctor would have created serious misgivings in the public mind, but he was very glad to have that opportunity of stating that Dr. Pembrey absolutely repudiated the interpretation that was put upon his evidence by the Commissioners.

Defective and Epileptic Children.—Mr. C. Bathurst asked the President of the Board of Education if he was aware that local education authorities, especially in rural counties, had expressed considerable dissatisfaction with the Elementary Education (Defective and Epileptic Children) Bill, under which provision would have to be made for boarding and instructing all such children within their area at considerable additional cost to local ratepayers, that they had no existing machinery for this purpose, and that they resented the proposal to fine them for failure to comply with the Board's requirements under the bill; and whether, under these circumstances, the Government proposed to proceed with the bill?—Mr. Pease said he had been in communication with representatives of the County Councils Association, and on the Committee stage he was prepared to meet fully all the points to which it had called his attention. Under those circumstances, and as there was a substantial increase of the Government grant offered, he trusted the bill might now be regarded as uncontroversial and allowed to pass this Session.

Open-Air Schools.—Sir J. D. Rees asked whether the Government proposed to provide for the development of open-air schools, in order that the physical deficiencies of the poorer children in public elementary schools, to which the tables of heights, weights, and state of nutrition testified might receive attention without addition to the existing rates and taxes.—The President of the Board of Education said that the Board of Education already paid grants in aid of open-air schools for children suffering from tuberculosis and other ailments for which open-air treatment was specially suitable. The Government was fully alive to the importance of the subject of open-air schools, but was alive also to the difficulty of the problem of developing the national system of education in any direction without further expenditure of public money, which would have to be provided out of either rates or taxes, or both.

Tuberculosis (Contra Toxin).—Mr. Oliver Locker-Lampson asked a question as to the recent treatment for consumption by means of a contra toxin, which was the result of experiments made by Frederick Mehnarto, of Heidelberg; and whether he would have the value of this treatment tested in the interests of sanatorium patients at the earliest opportunity.—Mr. Burns replied that the publicity given to the suggested remedy would no doubt lead to its value being tested.

Vaccination Standards.—Mr. Clynes asked the President of the Local Government Board whether his attention had been directed to figures showing that the child population of the city of Liverpool under 5 years of age was inefficiently vaccinated, the marks being less than the minimum standard of half a square inch prescribed by the Board; and, if so, would he say what steps he proposed to take in the matter?—Mr. Burns said that the minimum standard referred to was applicable only to vaccinations performed by public vaccinators at the public cost; and the powers of the Local Government Board in regard to vaccination did not extend to private medical practitioners.

Vaccination Accounts.—Sir Edwin Cornwall asked the President of the Local Government Board whether he was aware that the Board sanctioned a scheme of the Bethnal Green Board of Guardians for checking the accounts of public vaccinators and vaccination officers whereby 25 per cent. of the cases could be personally visited by the accountant to the guardians; was he aware that after one year's experiment it had been found that the £30 expended on this special work was more than saved by the detection of removals; had he any official information showing that greater amounts could be saved by a closer supervision over the accounts of all vaccination officers and public vaccinators; and, if so, would he institute a system for some such check.—Mr. Burns, in reply, said that the Local Government Board sanctioned the scheme referred to experimentally for one year, and had now received a report to the effect stated. He proposed to make further inquiry before deciding whether it was desirable that such a system should be made general.

England and Wales.

[FROM OUR SPECIAL CORRESPONDENTS.]

LONDON.

London County Council.

Administration of the Inebriates Acts.

During an all-night sitting of the London County Council, on July 22nd, discussion took place on a report by the Public Control Committee on the administration of the Inebriates Acts. The Committee stated, in reference to the Farmfield Reformatory for Inebriate Women, that the percentage of inebriates who benefited by reformatory treatment was very low. In the opinion of the Committee the results did not justify the expenditure. The following particulars were available with regard to the first 600 cases detained at Farmfield: 19.1 per cent. doing well (from recent inquiries it was doubtful whether these figures could be relied on), 2.7 per cent. did well for a considerable period, 45.5 per cent. relapsed, 15.0 per cent. could not be traced, and the balance was accounted for by death and other causes. The Committee reminded the Council that its policy hitherto had been to limit the scope of its operations under the Inebriates Acts on the ground that the hope of reformation of incorrigible inebriates and the mentally deficient and hopelessly diseased was so slight that the treatment of these persons must be regarded either as almost penal or as a matter of police administration. The Departmental Committee of 1908 upheld the view that the State was the proper authority to deal with incorrigible inebriates. The Public Control Committee advised the Council to cease to administer the Inebriates Acts after December 31st, 1913. As inebriates were committed for three years, the work would actually continue till 1916.

Mr. G. A. Hardy moved, and Miss Wallas seconded, the following amendment:

> That, as any surrender by the Council after December, 1913, of further responsibility for the care and reformation of London inebriates would involve a reversion to the old practice of committing incorrigible inebriates to prison for terms of short duration, and as such practice is admittedly useless, expensive, and inhuman, as well as a source of danger to the community, the recommendation be referred back to the Committee.

On a division the amendment was lost and the recommendation of the Committee adopted by 46 votes to 33.

Treatment of Tuberculosis.

The Public Health Committee reported with reference to the instruction of the Council in February to prepare forthwith a scheme for dealing with tuberculosis (British Medical Journal, February 15th, p. 363). The Committee noted a change of view on this subject on the part of the Local Government Board; the Board apparently no longer desired the Council to prepare a scheme dealing with dispensary provision, but desired the metropolitan boroughs to make arrangements, the London County Council to act merely as critic. The Committee had asked for a clear statement from the Board on this point. It would be realized how difficult it was to prepare a comprehensive scheme if the local authorities were dealing with the problem simultaneously from a local standpoint and without regard to the needs of London as a whole. Several borough schemes already prepared provided for the establishment of municipal dispensaries to the exclusion of existing provision, whereas it was manifestly desirable that regard should be had to existing available institutions. The Council, at the request of the Committee, expressed approval of the following principles in regard to provision for tuberculosis treatment.

1. All possible use should be made of existing institutions.
2. Approval should not be given to any scheme which fails to provide for each dispensary being linked up with a hospital to which special cases shall be referred for consultation or treatment, residential or otherwise; and that the Local Government Board be so informed.

Power to License Lying-in Homes.

The Council decided to give notice of its intention to promote legislation in the session of 1914 to obtain power to license lying-in homes in the county of London. The Midwives Act Committee stated, in recommending this step, that in administering the Midwives Acts it had been impressed with the necessity, both from the sanitary and from the moral point of view, for some measure of public control over lying-in homes. Over one hundred houses and institutions at which pregnant women were received were known to exist in London, and the necessity for conferring on local authorities powers to regulate such places was recognized to some extent in the two bills for the amendment of the Midwives Act, 1902, which were introduced in the House of Lords in the session of 1910. Moreover, representations had recently been made by delegates from various charitable societies and others that, as the result of the passing of the National Insurance Act, 1911, unmarried women who formerly obtained admittance to Poor Law institutions for their confinements now in many cases received maternity benefit under the Act and entered lying-in homes, at which, in some instances, they were subjected to immoral influences. The Committee advocated licensing rather than registration as the better means of dealing with the matter.

Massage Establishments and Public Morals.

The Public Control Committee reported that the Commissioner of Police for the metropolis had called its attention to the large number of advertisements relating to establishments where massage, manicure, and electric treatment were undertaken. The Commissioner stated that the police had reason to believe that many of these places were in fact nothing more than disorderly houses. The police had no power of entry, and had great difficulty in obtaining evidence. The Commissioner urged the Council to obtain powers of systematic inspection and supervision. The Home Secretary was so impressed with the urgency of the question that he had intimated his willingness to secure, if possible, amendments to the present General Powers Bill of the Council and save a year's delay.

The Council passed a resolution approving of immediate steps being taken in Parliament empowering the Council either to license or to register establishments of the kind referred to, and to provide for their inspection.

Calculation of Payments in Respect of Medical Treatment.

The Education Committee of the Council, on July 30th, decided that sums payable under the terms of the Council's agreements with hospitals, associations of medical practitioners, and other agencies for the medical and dental treatment of school children, in respect of salaries and capitation grants, should be calculated on the assumption that the working year consisted of forty-four weeks.

Medical Treatment in Schools: Reply to the Board of Education.

Dealing with the criticisms of the school medical service in London contained in the letter of the Board of Education,[1] the Education Committee promised a report in due course as to the extension of the functions of the assistant medical officers, suggested by the Board. As to the criticism that certain inspection work was undertaken by nurses instead of by doctors, the Committee stated the nurses must necessarily do some routine work in preparation for the visit of the doctor, and in order that he might inspect the requisite number of children at each of his visits. The physical measurements carried out by the nurses in 1911 were in complete agreement with the standards arrived at in former years from measurements made by medical officers. Arrangements, however, were being made for the school doctors to take the physical measurements on all occasions of children suffering from malnutrition. The school doctors had been instructed to examine all cases of defective vision reported as a result of the preliminary examination by the nurse, and the standard of defect was to be made more stringent. The preliminary examination of children for hard-of-hearing classes was made by the school doctor, and some cases were further specially examined by the Council's otologist.

[1] British Medical Journal, August 2nd, p. 278.

Fees for Accidents in Schools.

We have received from the Deputy Clerk of the London County Council the following scale, which has been adopted by the Council in respect of payments to doctors for the first attendance to pupils, scholars, or students who meet with accidents at educational institutions maintained by the Council, or to children who meet with accidents at dining centres in the administrative county of London:

	s.	d.
(i) Where a child, pupil, scholar, or student is taken to a doctor's surgery	3	6
(ii) Where a doctor attends a child, pupil, scholar, or student	5	0

In exceptional circumstances claims in excess of the fees specified are specially considered. The regulation does not apply to residential schools maintained by the Council.

LIVERPOOL.

FEES FOR ATTENDANCE ON UNINSURED PERSONS.

THE question of the remuneration of the medical attendants of the Liverpool tramway employees and of the Liverpool police still engages the attention of the local Division of the Association. The principle at stake is an important one—namely, that when any body of employees claims exemption from contributions under the Insurance Act they should not be provided with medical attendance at a lower rate than that established by the Act. The rate for insured persons, being general throughout the country, forms a convenient standard for non-insured organizations, and with reasonable cohesion in the profession it should be possible to enforce it in the case of all new appointments. In localities where the conditions are favourable, an increase to this minimum is to be aimed at, even in the case of existing office holders.

REMOVAL OF INSURED PERSONS.

The Liverpool Local Medical Committee at a recent meeting drew attention to the unfairness of panel doctors not being informed of the removal of insured persons from their area at the actual time of the change. It is found that an insured person who migrates from the area of his Insurance Committee frequently gives no notice of such removal until he requires medical attendance in a fresh area. Nevertheless, deduction is made from the medical attendant as from the actual date of change.

The Local Medical Committee also drew attention to the fact that insured persons who have been permitted to make their own arrangements in any insurance area forfeit their right to medical benefit if they migrate from the area during the period for which permission has been granted. It is doubtful whether this stumbling-block in the way of insured persons making their own arrangements has been left by accident or design.

BIRMINGHAM AND DISTRICT.

TREATMENT OF TUBERCULOSIS IN WORCESTERSHIRE.

THE Worcestershire County Council, at a special meeting at Worcester on July 29th, considered and agreed to a scheme for the treatment of insured persons and their dependants suffering from tuberculosis, and recommendations from Public Health Committee that the present arrangements be continued until the complete scheme is in operation, and that an agreement be entered into with the governing body of the King Edward VII (Worcestershire) Memorial Sanatorium at Knightwick to reserve in the institution, from a date to be agreed upon, sixty beds, at a yearly cost not exceeding £75 a bed, for a period of fourteen years, such agreement to be determinable at seven years if either party so desire. Under the scheme the Insurance Committee would pay over to the Council, for a term of years to be agreed upon, all moneys paid or credited to the committee by the Treasury for sanatorium benefit, less a sum calculated at 1d. for each insured person in the county, and less such sum as might be agreed upon between the County Council and the District Insurance Committees as the cost of domiciliary treatment for insured persons, towards the provision of sanatorium benefit.

The Public Health Committee supplied an estimate of the cost of treatment for the ensuing year as follows: Sanatorium, Knightwick, 60 beds, maintenance £3,900, capital £1,100; isolation hospitals, including Welland, 32 beds, £2,100; dispensaries, upkeep £1,000, officers and administration, £1,650; total—maintenance £8,650, capital £1,100, less grant from Insurance Committees, £3,000, and Government grant £2,825 (maintenance) and £550 (capital), leaving £2,825 maintenance and £550 capital.

NEW WARD AT THE BIRMINGHAM WOMEN'S HOSPITAL.

A new ward for cases of puerperal fever has been erected in the grounds of the Birmingham and Midland Hospital for Women at Sparkhill. The new building, which is isolated from the other buildings of the hospital, contains accommodation for twenty-five patients, and is entirely self-contained. On the southern side there is a verandah which will hold six beds for open-air treatment. Two years ago, under an arrangement with the City Council, the managing committee of the hospital agreed to reserve two beds for the reception of patients suffering from puerperal fever, but this number proved inadequate. The City Council has not contributed to the cost of the new building, which is £6,000, but the Health Committee has agreed to pay three-fifths of the annual expenditure; this will be about £1,000. A deficit of £600 still exists on the new isolation ward.

BIRMINGHAM CHILDREN'S HOSPITAL.

The fancy fair and garden fête held at the Botanical Gardens, Edgbaston, in June, in aid of the building fund of the new Children's Hospital, resulted in a net profit of £1,729. The donations amounted to £227 1s. 0d., and the fifteen stalls realized £1,387 18s. 11d. A sum of £34 19s. 2d. was obtained from entertainments, £93 from games, £100 6s. 6d. from gate money, and with other smaller items the total income amounted to £1,856 14s. 8d. The total expenditure was £162 7s. 11d., and from this was deducted the proceeds, amounting to £34 13s. 10d., of the David Garrick recital which was given in the Town Hall. There are still one or two additions to be made to the receipts.

WOLVERHAMPTON AND STAFFORDSHIRE GENERAL HOSPITAL.

The foundation-stones of a pathological and bacteriological department were laid on July 29th by Dr. E. Deanesly and Dr. H. Malet. The cost of the new building will be £1,300. Laboratory work for the Wolverhampton Corporation Health Committee will also be carried out at the hospital, and similar work will be undertaken for other local public health authorities. The ceremony was attended by the members of the board of management and by the medical staff, Mr. Shaw Hellier presiding. Dr. Deanesly congratulated the board on the spirit of progress and the wisdom and foresight it had shown in the establishment of the department, and said he considered it the greatest advance the hospital had made.

WORCESTER INFIRMARY.

The infirmary has been founded nearly 200 years, and on July 29th a special meeting of the governors was held, at which it was decided that a reduction in the number of beds, staff, and salaries was necessary, on account of the insufficient support the institution was receiving. It was resolved to reduce the beds to a maximum of seventy, and to reduce certain salaries and also the number of the staff. The full effect of this change will not be felt until 1914, when a reduction in expenditure of £2,000 might be expected as compared with 1912.

Ireland.

[FROM OUR SPECIAL CORRESPONDENTS.]

MEMORIAL TO THE LATE SIR HENRY SWANZY.

THE committee formed at the meeting at the Royal College of Surgeons last month has now issued an appeal for subscriptions to the memorial fund then founded. It is proposed to devote the sum received to the completion of the Royal Victoria Eye and Ear Hospital, in the foundation and construction of which Sir Henry Swanzy was

deeply interested throughout the best years of his professional life. It is estimated that about £12,000 will be required. The honorary secretary of the fund is Mr. J. B. Story, and subscriptions may be sent to the honorary treasurers, Swanzy Memorial, Royal Victoria Eye and Ear Hospital, Dublin. The committee comprises not only members of Sir Henry Swanzy's profession, but many eminent Irishmen, including the Lord Chancellor of Ireland, the Earl of Meath, the Presidents of the Chamber of Commerce and the Incorporated Law Society, and the Right Hon. W. D. Andrews.

The Belfast District Lunatic Asylum.

Dr. William Graham, Medical Superintendent, has lately issued the eighty-third annual report of this institution. The numbers showed a slight increase; 262 new cases were admitted; 127 were discharged, and 119 died; the total number on the books at the end of 1912 was 1,252, as compared with 1,237 at the end of 1911. First admissions had increased by 19, and readmissions by 10, but the number of admissions was below the average for the previous five years; and, although the number under treatment (1,499) was greater by 25 than the number last year, still the daily average number of those resident in the asylum was 1,241, as compared with 1,245 of the previous year.

Dr. Graham once more urged the necessity of early treatment; he pointed out the growth of thoroughly equipped psychopathic hospitals on the Continent, and the arrest that can be obtained in some forms of insanity when their danger-signals are heeded in time. Great regret was expressed that the Mental Deficiency Bill was not being applied to Ireland, where it was so much needed; and the hope was expressed that the educational benefit would arise from the eugenics movement, "which aims at the awakening of the public conscience to a sense of race responsibility, so that marriage will be no longer the channel along which may run the chartered curses of the world; to inform the public mind and drive home such a single truth as has been verified by many a sinister historical illustration, that the confluence of the tainted streams can have but one outcome—a stream more tainted still." Dr. Graham added that the three most potent causes or associated factors of insanity were heredity, mental stress, and toxic products. He enlarged upon those phenomena, and by apt quotation from recent literature and the stage endeavoured to bring home to the public that it is not a mere recondite and distant scientific problem he was dealing with, but an intensely personal question of everyday life. Freud's investigations were outlined. The introduction to the report, as a whole, forms a valuable lesson worthy to be studied by all interested in the future of the race.

Scotland.

[FROM OUR SPECIAL CORRESPONDENTS.]

Tuberculosis Officer for Edinburgh.

With the acceptance by Dr. John Guy of the appointment of assistant medical officer of health and tuberculosis officer for the city of Edinburgh at a salary of £600 per annum (vide JOURNAL for August 2nd, p. 279) the new tuberculosis posts have been filled up. Dr. Guy graduated M.B., C.M.Glasg. in 1894, took the degree of M.D., also at Glasgow, in 1900, and obtained the D.P.H.Camb. in 1899. He was recently elected a Fellow of the Royal Faculty of Physicians and Surgeons of Glasgow. Dr. Guy first engaged in private practice, and acted as assistant police surgeon and resident medical officer of the Union Infirmary at Bradford; then he became assistant superintendent of the Leeds Union Infirmary, and again took up private practice (in Leeds); then he proceeded to specialize in tuberculosis, and for seven years was superintendent of the Bridge of Weir Sanatorium in Renfrewshire; and, only six months ago, was selected as tuberculosis officer for the county of Gloucester and expert adviser to the County Insurance Committee.

Death of the Bedellus of the University of Edinburgh.

For fifteen years, since the resignation of Mr. John Chapman in 1898, the tall figure of Mr. James Tweeddale has been familiar at all functions in which the university has taken part. To successive bands of students he was well known as mace-bearer and janitor, and there will be many to whom his sudden death from heart failure last week will come as a shock. Mr. Tweeddale served for twenty-three years in the Royal Horse Artillery, and went through the Afghan war in 1878. In 1880 he began his long connexion with Edinburgh University, first as one of the janitors and later as mace-bearer. He was 72 years of age. His funeral on August 5th was attended by Principal Sir William Turner, Vice-Chancellor of the University.

India.

[FROM OUR SPECIAL CORRESPONDENT.]

Permanganate Treatment of Snake-bite.

The resolution of the Central Provinces Administration on deaths caused by wild animals and snakes last year expressed a doubt as to the practical value of the method advocated by Sir Lauder Brunton. Difficulty had been experienced in obtaining proof of the venomous character of the snakes by which the persons treated were bitten. The Inspector-General of Civil Hospitals, who investigated the history of the permanganate treatment in the Provinces, reported that of the total number of cases in the previous six years there were only five which could be looked upon as "more or less authentic cases of bites by poisonous snakes treated by the Lauder Brunton method alone"; but, even in these instances, the Inspector-General added, it was not absolutely certain that recovery was solely due to the treatment. In view of these facts, and of some discouraging experiments reported from the Bombay Bacteriological Laboratory, the Inspector-General last year did not recommend the adoption of measures for extending the use of the Lauder Brunton lancets. In the resolution for this year it is stated that the successful treatment of snake-bite by the Lauder Brunton method is reported from several districts, although in only one case had it been clearly established that the snakes were poisonous. In this case, which occurred at Drug, the victim, while in his hut at the village of Bhilai, was bitten in the toe by a snake. A basket was immediately placed over the reptile and information at once sent to the police station. A constable, who happened to possess a Lauder Brunton lancet, promptly proceeded to the hut and treated the puncture in the toe in accordance with the directions. Mr. Crawford, Deputy Commissioner at Drug, saw both the man and the snake at the district head quarters on the following day, and the snake was clearly identified as a krait (*Bungarus coeruleus*). "In view of this report," says the resolution, "and in the light of the successful experiments in the same field of inquiry with the Lauder Brunton lancets by Major Leonard Rogers, as published in the issue of the *Indian Medical Gazette* for December, 1912, the Chief Commissioner desires to modify the direction given in paragraph 4 of the last year's resolution, and will be glad to see a more extended use made of the Lauder Brunton method, provided it is carefully applied." It is pointed out that, in reporting cures by this treatment, it should invariably be noted in each case whether the snake was identified as poisonous; whether a ligature was applied immediately or soon after the biting, and if so, how long before the application of the Lauder Brunton method; whether the person bitten ever showed any symptoms of snake poisoning; and also whether any other method of treatment was applied before the cure was effected. The practical importance of the subject to the people of the Central Provinces may be judged from the fact that the resolution records no fewer than 1,063 deaths from snake-bite during the year 1912, the number in Jubbulpore division alone being 405.

Rabies.

The increasing number of the patients who have resorted to the Pasteur Institute at Kasauli during the

last few years indicated the great prevalence of rabies in India. The directors very rightly lay stress on the importance of eradicating the disease. In a few years India will have four or five institutes capable of treating between 8,000 and 10,000 persons. But these institutions will not affect the source of the disease. Rabies has been stamped out in England. It could be stamped out in India sooner or later, despite the vast areas to be dealt with, if public opinion would permit the enforcement of the same measures.

BOMBAY MUNICIPAL NURSES.

The work of the municipal nurses in Bombay, who number ten in all—one for each district—includes the duty of reporting to the doctor in charge all infectious diseases that come to their knowledge; every mother is visited shortly after her confinement by the nurse, who gives a few simple practical hints as to the management and care of both mother and child. Lastly and principally, she attends the confinements of poor women who, on account of home ties, such as a sick husband or very young children, are unable to go to hospital. The municipal nurse is a godsend to these poor mothers, as she steps in the place of the experienced *dhai*, the "Mother Gamp" of India, whose dreadful and criminal practices are one of the main factors of infantile mortality in the East. It is to be hoped that some day the administrators of law in India will be in a position to deal with the *dhais* as severely as they deserve; at present, unfortunately, nothing can be done to stop these women from practising.

THE NAGA EXPEDITION.

Several interesting though gruesome trophies of the Naga expedition have been brought to Calcutta by Major Wilson, who was in command of the expedition. One is a skull basket which, until it was captured, was proudly possessed by a head-hunter. Round the basket is hung a festoon of five monkey skulls, representing the number of human heads accounted for by the owner of the basket. Next in gruesome importance to this is a battle-axe with a streamer of red and black dyed hair attached to the handle, and a wooden sheath for the blade. On the blade are carved five images of human beings who had been killed by the owner of the axe. There is also another battle-axe similar in design but without the sheath, and a bow made of bamboo with poisoned arrows.

SOUTH TRAVANCORE MEDICAL MISSION.

DR. O. H. BULLOCH'S report for 1912 gives evidence of increasing success of this excellent organization. It consists of a central hospital at Neyoor and fourteen branch dispensaries scattered over the State. Associated with the hospital is a school in which men are trained for work in the branches. There is also at Neyoor a leper asylum and an orphanage. During the year 110,672 patients were treated and 339 major operations were performed, with a death-rate of under 2 per cent. Among them were 25 laparotomies, 16 obstetric operations for dystochia, no fewer than 78 for cancer of the cheek, lip, jaw, or tongue, induced by the practice of betel chewing. A pamphlet has been prepared and distributed pointing out the danger of this habit. Attention is drawn to Major Parsons's method of injecting quinine into the broad ligaments for prolapse of the uterus; 14 cases were so treated, with a fair amount of success. The mission is supported by grants from the London Missionary Society, and the Travancore Government gave subscriptions. It is doing good work and is well worthy of support.

SANITATION IN INDIA.

More than a year ago the Government decided to create eight additional appointments of Deputy Sanitary Commissioners in connexion with the then scheme for the improvement of the sanitary services in India, and now four more have been added to the list, thus raising the total to twenty-six. The allotment is to be as follows: Three to Bengal; two each to Madras, the United Provinces, and Bihar and Orissa; and one each to the Punjab, the North-West Frontier Province, and Burma. Nine of the twelve appointments are open to officers not belonging to the Indian Medical Service, and six Indians have been already appointed. In addition thirty-nine first class and one hundred and four second class health officers are to be appointed to the municipalities.

Australia.

[*FROM OUR SPECIAL CORRESPONDENT.*]

COMPULSORY NOTIFICATION OF VENEREAL DISEASE.

THE Government of Queensland has issued a proclamation pursuant to the provisions of the Health Act, declaring that in Brisbane and its immediate neighbourhood venereal diseases shall be compulsorily notifiable under the Act. The regulations, which came into force on April 1st, provide that if the commissioner or any medical practitioner suspects that a person is affected with venereal disease, the commissioner may in writing require such person to submit herself or himself for examination by clinical and bacteriological methods. Any breach of the regulations is punishable by penalty not exceeding £20. A special dispensary for the gratuitous treatment of venereal diseases has been established in connexion with the General Hospital, Brisbane.

HEALTH OF QUEENSLAND IN 1912.

The annual report of the Commissioner of Public Health for the year ending June 30th, 1912, states that the estimated mean population of Queensland at the end of 1911 was 614,352. Exclusive of full-blooded aboriginals, the census population was 605,813. The total number of aboriginals is estimated at between 15,000 and 20,000. The crude birth-rate was 27.66, which is higher than that for any year since 1902. The crude death-rate was 10.65, showing a slight rise for the previous seven years. The infant mortality-rate was 65.44 per 1,000 born; this is a slight increase on that of the previous year, but, with this exception, it is the lowest for any year in the decade.

The number of notifications of diphtheria was 1,496, and of typhoid fever 1,501. The death-rate from tuberculosis was, for both sexes, less than three-fourths of that for the Commonwealth for that year, as the Commonwealth rate is one of the lowest in the world.

From time to time it is alleged that Australian death-rates are heavily increased by deaths of persons sent out for their health from Europe. That this is not the case was apparent from the fact that in 1910, out of 3,617 deaths from tuberculous disease in Australia, 2,639 were persons born in the Commonwealth, and only 1,000 had been resident for less than four years. The conclusion is that the great bulk of the phthisis death-rate is the result of local infection.

During the year 6,200 rats and mice were destroyed, and 27,300 carcasses were submitted for examination at the departmental laboratory; no case of plague was reported in either human beings or rats. This is ascribed to unremitting persistence in the work of destroying and examining rats in the different coastal centres.

Of the cases of leprosy admitted, 1 was nodular leprosy, and the remaining 3 tuberculo-anaesthetic; the total number of cases known was 73.

During April and May a tour was made in the Torres Straits Islands for the purpose of investigating local conditions relating to tropical and exotic diseases, and endeavouring to secure vaccination of the natives. Twelve islands, with an estimated population of 1,802, were visited; 1,279 persons were vaccinated, comprising over 70 per cent. of the total estimated native population of these Torres Straits islands which lie within the jurisdiction of Queensland. The sanitary condition of the inhabited islands was investigated, the native councils were addressed, approved methods of remedying sanitary defects were pointed out, and the principal features of local sanitation were discussed with the Government teachers stationed on the principal islands. Some 13 cases of a disease believed to be "gangosa" were found. The disease has been reported by observers in many widely separated parts of the world, including Guan, the Philippine Islands, New Guinea, and Fiji. Some observers maintain that it is an aberrant form of syphilis, whilst others regard it as a separate disease of the same group as syphilis and yaws. It has been mistaken for leprosy, but it is clinically quite distinct. The disease was clearly referred to by Dr. Wilson, R.N., in an account of a visit paid by him to Murray Island in 1822.

Figures brought forward by Dr. Maclean show that 130 (10.8 per cent.) out of 1,200 persons admitted to the Brisbane General Hospital for all causes from July, 1908, to May, 1910, had a filarial organism in the blood, and that a large number of surgical operations were required for conditions of lymph stasis caused by the parent worm. It is considered to be feasible, by the expenditure of a moderate amount of money, to reduce very materially the present nuisance and risk in the large centres, and the provisions of the Health Act enable the matter to be taken up actively and furnish the requisite statutory authority which is essential for effective effort. A great deal of work was accomplished by the sanitary staff of the Public Health Department in examining the breeding places of mosquitos and drinking pools infested with the larvae.

Hospital Maintenance.

On May 3rd Hospital Saturday was observed in Sydney and suburbs, and something over £8,000 was collected. During the nineteen years the Hospital Saturday Fund has been in existence it has been the means of distributing no less a sum than £92,500 among the various participating hospitals and medical charities, all voluntary contributions from the public. The £8,000 collected last Saturday brings the total to over £100,000. To finance the large hospitals of the city is a matter of considerable difficulty. To maintain the three leading hospitals—namely, the Royal Prince Alfred, the Sydney, and the Coast—during last year required £107,400. Of that amount the Government gave £84,650. Prince Alfred Hospital had an income for maintenance of £40,700; of that amount the Government contributed £27,950. The expenditure of Sydney Hospital in maintenance was about £38,000; to that amount the Government gave £28,000. The Coast Hospital was entirely maintained by the Government at a cost of £28,700. In the case of Prince Alfred and Sydney Hospitals, the balance was made up from contributions from the patients, by public subscriptions (to the extent of 12 per cent. of the total income), and the balance from interest on invested funds and other ways. Year by year hospital work in Sydney is growing at a rapid rate. Royal Prince Alfred, the largest of the metropolitan hospitals, had over 1,000 additional patients last year, and the extra demand on the whole of the other hospitals was equal in proportion to their size. The medical and nursing staffs had to be largely increased at each centre. Every bed in each institution was fully occupied throughout the whole year. New wards have been opened, and additional beds provided, at many hospitals to meet the increase in population which has taken place during the last few years. The strain is likely to continue, and it means increased expenditure, which can only be met by a corresponding increase in income.

Vital Statistics of Sydney.

The State Government Statistician reports that for the month of April the birth-rate was 29.91 per 1,000 of the population. This is the highest for the month of April since 1895, and 17 per cent. above the average for the previous five years. The illegitimate birth-rate is much below the average of the previous five years. Of the births 271, or 16 per cent. of the total, occurred in hospitals and other public institutions. Of the total deaths 354 were of males and 283 were of females. The mortality-rate was not satisfactory, being considerably above the average of the previous five years for April. The deaths were above the average in all the age-groups. The infantile mortality was 77 per 1,000 births, 8 per cent. below the average of the previous five years. Among the very old persons who died one was aged 92 years. During the month dysentery and enteritis contributed 65 deaths; cancer caused 57; diseases of the heart and wasting diseases of infants, 55 each; pulmonary diseases, 43; phthisis, 39; Bright's disease, 35; accident, 32; epidemic diseases, 31; haemorrhage of the brain, etc., 27; and senility, 20. Included in the deaths from pulmonary diseases were 29 from pneumonia and 13 from bronchitis. Of the epidemic diseases, typhoid fever and whooping-cough caused 9 deaths each, diphtheria 8, measles 2, and influenza 1. The returns of the Board of Health show that 69 cases of typhoid fever, 163 of diphtheria, and 40 of scarlet fever were notified during the month.

The Protection of Children.

The annual report of the State Children Relief Board for the year ended April, 1912, which has just been published, gives a good account of the valuable work done in New South Wales for the protection of children. This Board administers three Acts of Parliament: (*a*) The State Children Relief Act; (*b*) The Infant Protection Act; (*c*) The Neglected Children and Juvenile Offenders Act.

The State Children Relief Act provides for the boarding out of dependent children with approved guardians or with their own mothers, when the latter are deserving widows or deserted wives with children under 12 or 13 years of age, and are not in a position to provide for them independently. The proportion of children boarded out to the population is 5.3 per 1,000; the proportion of children boarded out apart from their parents is 2.7 per 1,000; the proportion of children boarded out with their own mothers is 2.43 per 1,000. The inspection of these children is carried out by a staff of thirty-three departmental inspectors, to each of whom is assigned a defined area of inspection in the metropolitan and suburban districts. There are also three lady inspectors specially charged with the supervision of the conditions of infant life, and who visit and inspect infants placed out apart from their mothers in the city and suburban areas. The Board permits not more than three children to be placed with any one guardian, except in the case of families of children, brothers and sisters, under ordinary circumstances, being placed in the same home. An effort is made to obtain individual attention for each child, the adult assistance available in a home being one of the considerations which influence the Board's officers in determining where children shall be placed.

Some thirty years ago the cottage home system for the treatment of afflicted State children was introduced into New South Wales. Some sixteen to twenty invalid or crippled children are placed in each home under the care of a "mother-in-charge." Children who are physically able to do work are given suitable occupation. Girls are engaged in tailoring, laundry work, cooking, and general household duties. Boys are given farming, gardening, or other work. The age of the children varies from 12 to 18 years. The physical and mental infirmities with which they are afflicted render them regular inmates of the home perhaps for years. Cripples, cases of partial paralysis, chronic ophthalmia, uncontrollable temper as the result of their afflictions, are met with in these homes. As such are for the most part incurable, all that can be done by kindly and judicious discipline is done for them, and when the time comes for them to leave the homes there are only a few of them who cannot make some attempt to provide independently for themselves. There are in all thirteen cottage homes, eight of which are used for invalid or crippled children, while five form the farm home for boys. These are all in the country, and in addition to chronic cases of ill-health, children temporarily indisposed, and needing change of air are treated. This treatment has proved very beneficial, particularly in the case of children who have come under the control of the Board from the slum districts of the metropolis. The improvement in the physical condition of such children is remarkable in a very short time. In two of these homes provision is made for such of the Board's wards as are mentally deficient, yet not sufficiently so to warrant their commitment to a hospital for the insane. The cottage home for feeble-minded children at Parramatta was opened in 1908 with 10 children. The cottage is in the charge of an experienced matron, and a specially trained teacher, certificated in Kindergarten principles, has been appointed to instruct the children according to their capacities. The children show themselves remarkably susceptible to music and singing. The results so far have been satisfactory. Since the home was opened 50 children have been admitted for treatment and 35 discharged.

In addition to these cottage homes in the country, there are babies' homes in the city and country which treat specially sick and ailing children who, at the time of admission, are actually or apparently in a dying condition as the result of neglect, wilful exposure, improper feeding, or other causes. The home in the city was opened by the Board to meet the pressing needs of a class of children who, by reason of the nature of their illness—usually

some form of infectious disease—and in the absence of proper accommodation, could not be dealt with in the general hospitals. Taking into account the nature of the cases admitted to the home, the mortality-rate must necessarily be high; many of the cases are syphilitic, and many of them have suffered from gastro-enteritis prior to admission, none coming up to the standard of weight for age. The visiting medical officer in his report says:

During the last three years there has been a marked change throughout New South Wales as regards the infant life that passes through this home, in so far that there has been a notable decrease in cases of gastro-enteritis and its after-effects, and also in cases of syphilis and tuberculosis, but there have been more cases of meningitis during the past three years than in the first two years. During the past two years there have been only 3 cases admitted to the home of what I designate criminal neglect, and there were none during the year just expired. The following causes appear to have produced this result:

1. The compulsion of all mothers who have been confined in maternity homes or hospitals to take their babies for fortnightly medical examination.

2. That it has been more prevalent to send the mothers with their babies into these infant homes in order that they may give proper maternal attention for the first few months after birth and under proper supervision.

3. That there is also a greater tendency to place those mothers that are delicate in such home for two or three months prior to their accouchement, for medical treatment, proper nourishment, and proficient nursing.

4. The visiting of all known cases of maternity residing in the poorest districts by lady inspectors, who impart to such mothers the proper instructions as to feeding, clothing, etc. Most of the mothers with babies admitted during the year were healthy and had a superabundance of milk, and they willingly consented to suckle any delicate babies that were admitted without mothers, a point that has helped to materially reduce the mortality. During the past year there has been only one case of gastro-enteritis that appears to have originated in the home, and this is the first and only one that has so occurred during the past five years.

Every case admitted to this home is isolated on admission for three days, with the result that there has been no infection conveyed to resident babies, though there have been periods when there were thirty-five babies resident. The premises where this work is carried on are quite unsuitable, and the present urgent need is the establishment of proper and adequate hospital facilities for the treatment of young infants suffering from diseases of great infectivity. The hospitals which do exist are not able to provide the necessary accommodation for the further reduction in the mortality-rate. There has been a marked lowering in the mortality-rate since the year 1886, and there seems little doubt that this is to be attributed to the gradual departure from the practice of herding large numbers of young infants in foundling hospitals and similar institutions. The experience of the State Children Relief Board has always been that, given average good conditions, children of any age thrive better in private home environment under the individual management of foster mothers.

Other homes have been established for the accommodation and training of sexually depraved and mentally and physically unsound wards, who would otherwise be a menace to the welfare of ordinary children. These homes are for boys only, and the cases sent there represent the small proportion of children, largely degenerate, who are found in every community and not amenable to ordinary routine conditions. The ages of the lads vary from 11 to 17 years, and since its inception 177 boys have passed through it with satisfactory results.

Allowances are being paid to 1,674 widows and deserted wives in their own homes towards the support of 4,453 children under 12 years of age. In a few cases the payment is being made after the children have attained the age of 12 years, in accordance with a suggestion that the money should not be withdrawn in necessary instances until the children were 13 or 14 years old.

It has been always recognized by the Board that the extension of this form of relief is usually accompanied by a certain amount of attempted imposition in various forms on the part of a proportion of the applicants. That proportion is fortunately small, and the imposition is especially guarded against.

The Infant Protection Act, which became law in 1904, provides for the supervision of the maintenance, education, and care of children up to 7 years of age who have been placed in private homes or religious establishments apart from their parents. This measure also provides for the inspection, supervision, and control of places established and used for the reception and care of two or more children of the age indicated. The number of children who may be kept in any one home or institution is limited by the terms of each licence. Sanitary conditions for and appropriate treatment of the children are, of course, salient factors in determining the conditions under which the licence is to issue. The homes are classified under two headings: (1) Those for the accommodation of a maximum of five children, and (2) those above that number. The former are usually the dwellings of private householders, while the latter deal with institutions maintained by public subscription. Over the private dwellings there is, in addition, the control prescribed under the Children's Protection Act in regard to children under the age of 3 years. The institutions and licensed homes are visited regularly by officers of the department. The general health of the children has been good. The causes of death were marasmus, measles, bronchopneumonia, gastro-enteritis, congenital syphilis, and asthenia. The number of deaths was 31, as compared with 34 during the preceding twelve months. The main cause of death was gastro-enteritis.

The report concludes with the following summary of suggestions now awaiting consideration:

The establishment of a training home for State girls; the establishment of a cottage home for epileptic State children; transfer of the Ophthalmic Cottage Home from Mittagong to a site nearer Sydney to allow of expert medical attendance on the children; facilities for industrial training of State children prior to apprenticeship in all cases—in this connexion, age of apprenticeship to be raised to 14 years and scale of apprentices' wages to be revised; extension of hospital facilities to allow of the proper accommodation and treatment of infants suffering from gastro-enteritis and diseases of similar infectivity; introduction of adequate legal supervision over defaulting parents and near relatives; amendment of the Acts administered by this department on the lines indicated in previous reports and documents; establishment of shelters in country centres.

Special Correspondence.

VIENNA.

Medical Inspection of Schools.—Radium for Hospitals.—Increase in the Number of Foreign Post-graduates at the University of Vienna.

The medical inspection of school children has hitherto received little attention in Austria, but the question has recently been brought before the public by a number of eminent men, and several isolated attempts have been made to form a regular medical service for school inspection. A short time ago, moreover, the Vienna Medical Council (*Aerztekammer*) organized a conference at which a large number of schoolmasters, teachers, general practitioners, and specialists met to discuss the matter in all its bearings. There was a complete unanimity of opinion as regards the necessity for the medical inspection of schools: but the majority of those present considered that the proposed service should be organized and controlled by the school board, without, however, interfering in any way with the doctors, to whom, of course, the actual treatment of disease would be entrusted. It was also suggested that the children of poor parents should either be sent to a dispensary or an out-patient department, or that special school clinics should be founded for their benefit. It was agreed that the medical inspection of schools should be purely prophylactic, and that the work should not be left in the hands of matrons and nurses, since it could be dealt with in a satisfactory manner only by a duly qualified practitioner. Much stress was laid by the specialists present at the conference on the importance of examining school children for defects of the eyes, ear, nose, throat and speech, teeth and feet. Many of those present were of opinion that only district officers of health should be eligible for the post of medical inspector of schools, but this suggestion met with great opposition. As regards the monetary side of the question, it was decided that only a moderate salary should be offered during the first few years, in order that the success of the scheme might not be jeopardized by the necessity for large funds. A memorandum embodying the resolutions passed by those present at the meeting is shortly to be forwarded to the Ministry and the school

board, and will form the basis of the regulations drawn up by the governing bodies.

A deputation, consisting of the heads of the obstetrical and dermatological clinics of Vienna, recently waited upon the Ministers of Commerce, Teaching, and Finance, and presented each with a petition drawn up by the senate of the university. This document described the ravages wrought amongst mankind by carcinoma, and showed the benefit to be derived in cases of inoperable cancer from exposure to actinic substances, particularly radium and its salts, as well as mesothorium. The Government was asked to find the funds for supplying all clinics with a sufficient quantity of this most effective substance. The disease, especially in women, is often far advanced before its diagnosis is possible, and in these cases the use of radium can do much to mitigate the patient's sufferings. As the celebrated mines of Foachimsthal, where so much pitch blende and other radium-containing minerals are found, are the property of the Austrian Government, the supply of the necessary quantity of radium could easily be warranted. The deputation was favourably received by the Ministers, who promised an early fulfilment of their wishes. In the meantime the municipality of Vienna has decided to buy 50 mg. of radium and a large quantity of mesothorium for use in the new Municipal Jubilee Hospital of Vienna, which contains a thousand beds.

The summer term of the University of Vienna has once more witnessed an influx of foreign medical men to the wards and class-rooms of the Viennese hospitals. There are at present about eighty English and American physicians and surgeons following the post-graduate courses, as well as a large number of Italians and Roumanians; and more are expected for the autumn session. There can be no doubt that foreign doctors find that their fees are not wasted, and that they get good value for the money they spend, both as regards instruction and practical work.

Correspondence.

SPONTANEOUS REDUCTION OF A DISLOCATION OF THE CERVICAL VERTEBRAE.

SIR,—Many will have read with interest Dr. Bentall's very successful case published under this heading in the JOURNAL of July 12th (p. 69). I hope I shall be pardoned if I suggest that the evidence produced does not, I think, quite prove that reduction had taken place. The evidence shows that the cord recovered from the primary injury, and had adapted itself almost completely to whatever condition had been established. I do not say reduction has not taken place, only that I am not quite convinced on the evidence. Another skiagram would much elucidate what has actually taken place.—I am, etc.,

Blackpool, July 24th. WILLIAM HARDMAN.

ASSISTANT MEDICAL OFFICERS IN ASYLUMS.

SIR,—It is interesting to notice the rather large number of vacancies at present existing in this important branch of our public medical services. Looking over the numerous advertisements for junior medical officers, it is apparent that the rate of remuneration has risen somewhat, doubtless because few applications are received, but will that small initial increase of stipend induce the average man to enter the service as he would the army, navy, or public health services? I think not, and I would be sorry for him if it did. The uncertainty of prospects and the disabilities of the service generally far outweigh any such trivial inducement. This he would soon discover. Until some action is taken to improve existing conditions, the asylum medical officer will remain a professional pariah, whose life, like the policeman's, is "not a happy one." For those who take such positions for a year or so it may be pleasant enough, but for those who take it up as a serious life-work—and they alone count for efficiency and progress—the prospects are not alluring. It is invidious to have to state it, but the fact remains that our colleagues who have been fortunate enough to become superintendents trouble little to improve matters. Senior medical officers fear to incur the displeasure or disapproval of their superiors, and being in a condition of patient expectancy, dare not risk their possible promotion by any public ventilation of grievances.

It would be tedious to enumerate the disabilities of the service from our point of view; a little inquiry before accepting an appointment would easily discover them; nor is it necessary here to point to the advantages possessed by other members of the asylum service—namely, the chaplains, the clerks, and stewards—as compared with the assistant medical officers, who by reason of their work must live in the asylum and in close touch with the patients. Not one-third of the men who join the service can expect, even after years of good work, to obtain the coveted superintendency. Promotion is a mere gamble, and is left to the arbitrary will of a committee of laymen. What, then, are the asylum medical officer's prospects? A "two-room" life, which socially, to all intents and purposes, means annihilation, at least to most men with ordinary human ambitions. He remains a lifelong house-physician. He is allowed a little time off each week—which often is of little use, as most county asylums are situated in remote country parts—and a month's annual vacation. Asylum amusements are routine asylum duties. The work is oftentimes more clerical than scientific. Should the medical officer fail to secure a superintendency, his last hope is to hold on till he reaches the pensionable age of 55, a mere routinized celibate whose life has been one long-drawn house-physiciancy—a mere automaton, a failure.

May I submit the following points, as being worthy of the attention of those who are interested?

1. Promotion to superintendencies should not be a matter of haphazard choice of a changing committee of laymen.
2. All senior medical officers should be provided with residences on the asylum estate.
3. The discrepancy of remuneration as between medical superintendent and senior medical officer is too great.
4. Facilities should be afforded for post-graduate courses.

—I am, etc.,

July 8th. AN A.M.O.

EUGENICS.

SIR,—In your issue of August 2nd there is an error in the account of the discussion following the papers on eugenics at the annual meeting. I am reported as saying that, "if natural selection were limited, men were brought back to the animal." My words were, "if natural selection were *imitated*," etc., this having been suggested by one speaker as the proper aim of eugenics.

Man is evolving on a different plane to the rest of the animal kingdom, his relationship to his environment and to his fellow man being peculiar to his species. But, if this peculiar relationship be granted, the term "natural" selection, as applied to the survival of individuals or *groups of individuals*, may be admitted, but only as a term indicating that there is no interference with the law of cause and effect. It is wrong to use it in a sense that man must submit to the same processes as the rest of the animals to compass his survival. To do so he must place himself on their level and cease to be man.—I am, etc.,

London, N.W., Aug. 4th. J. S. MACKINTOSH, M.D.

HEARSEY, in his *Nyasaland Sleeping Sickness Diary*, Part XX, 1913, states that 20 cases of the disease have been reported during the past four months, namely, 7 in January, 6 in February, 5 in March, and 2 in April. Of this number 19 were found in the sleeping sickness area and 1 near Kota-kota, in the Marimba district. These 20 cases, added to those previously reported, make a total of 128. As regards prophylactic measures, clearing of bush and scrub and the lopping of branches of trees which might afford shelter for tsetse flies is being carried out around all the villages in the sleeping sickness area. Dr. Conran, the medical officer in charge of this area, reports that the work is attended with marked success in banishing the flies from the villages. A reinvestigation of the districts to the north and south of the proclaimed area will shortly be undertaken, as it is necessary to ascertain definitely whether these localities harbour cases of the disease or not.

Universities and Colleges.

UNIVERSITY OF CAMBRIDGE.

THE following degrees have been conferred:

M.D.—J. W. Noble.
M.C.—L. Bromley.
M.B., B.C.—R. Fisher, W. M. Oakden, A. B. Paul, W. A. Pocock, E. L. K. Sargent, A. S. Seabrooke, G. W. Spencer, J. L. M. Symns, W. J. F. Symons, J. F. Taylor, J. B. A. Wigmore, E. Wardby.
B.C.—K. B. Aikman, M. Avent, H. F. Comyn, J. R. Griffith, M. N. Perrin, E. S. Taylor.

The Raymond Horton-Smith Prize for 1913 has been awarded to F. A. Roper, M.A., M.D., of Trinity College, and F. S. Scales, M.A., M.D., of Jesus College, whose theses for the M.D. were adjudged to be of equal merit.

Mr. J. H. Burn has been elected to the Michael Foster Research Studentship, and Drs. Emma M. Johnstone and R. C. Monnington have been approved at the second part of the examination for the diploma in Psychological Medicine.

UNIVERSITY OF LONDON.

MEETING OF THE SENATE.

A MEETING of the Senate was held on July 16th.

Recognition of Teachers.

The following teachers were recognized as teachers of the university in the subjects indicated at the following medical schools:

St. Bartholomew's Hospital.—Mr. Robert C. Ackland (Dental Surgery), Dr. Walter L. Brown and Dr. James H. Thursfield (Medicine), Dr. Philip Hamill (Pharmacology), Mr. Harold W. Wilson (Surgery).

St. Thomas's Hospital.—Dr. Hugh MacLean (Pathological Chemistry).

Westminster Hospital.—Dr. S. Ernest Dore (Dermatology).

London Hospital.—Dr. Richard D. Maxwell (Midwifery and Diseases of Women), Mr. Albert J. Walton (Surgery).

Middlesex Hospital.—Dr. Edward A. Cockayne (Medicine), Mr. Alfred E. Johnson (Surgery), Dr. Arnold Lawson (Ophthalmology).

University College Hospital.—Dr. Thomas Lewis (Medicine).

London School of Tropical Medicine.—Mr. Charles Morley Wenyon (Protozoology).

D.Sc. Degree in Physiology (Internal).

The degree of D.Sc. in Physiology was conferred on Dr. Gordon C. McKay Mathison, of University College, who presented a thesis on the action of asphyxia upon nerve centres.

M.S. Degree for Internal Students.

It was resolved that the regulations for internal students in the Faculty of Medicine be amended by the deletion of the words "the M.B. Degree previous to October, 1904, or" in the sixth paragraph, on p. 191, of the Red Book, 1912-13.

B.Sc. Honours Degree in Anthropology.

The following were approved as subsidiary subjects for the B.Sc. Honours Degree in Anthropology for internal students: Psychology, Geology, Zoology, Physiology.

The Rogers Prize.

It was resolved that the second paragraph of the regulations relating to the Rogers Prize should be amended to read as follows:

> The prize shall be open to all persons whose names appear on the *Medical Register* of the United Kingdom.

The subject of the essay or dissertation for the Rogers Prize for 1914 will be "The Nature of Pyrexia and its Relation to Micro-organisms," and the latest date for the receipt is April 30th, 1914. Copies of the regulations for the award of the prize can be obtained on application to the Academic Registrar.

Advanced Lectures in Physiology.

The following scheme of advanced lectures in physiology for the session 1913-14 has been approved:

University College.—(1) Second term, 1914: Eight lectures by Dr. C. L. Evans on Oxidation in the Tissues.

King's College.—(2) First term, 1914: Four lectures by Professor W. D. Halliburton, F.R.S., and Professor W. E. Dixon, F.R.S., on The Cerebro-Spinal Fluid. (3) Second term: Four lectures by Professor A. Harden, F.R.S., on Fermentation. (4) Third term: Four lectures by Professor T. G. Brodie, F.R.S., on The Gaseous Exchanges of the Body.

Guy's Hospital.—(5) First term: Eight lectures by Dr. Kennaway and Mr. Poulton on Physiological Significance of Acidosis. (6) Second term: Eight lectures by Dr. Pembrey and Mr. Ryffel on Physiological Effects of Anaesthetics and Narcotics. (7) Third term: Four lectures by Dr. J. S. Haldane, F.R.S., on Secretion of Urine. Courses numbered (1) (5) and (6) as well as the following lectures were recognized as advanced lectures which a candidate at the B.Sc. Honours Examination may name for part of his examination.

Scheme of Lectures in Physiology for B.Sc. (Honours) Examination.

The following lectures were recognized as advanced lectures which a candidate at the B.Sc. Honours Examination in Physiology may name for part of his examination:

Bedford College.—Advanced Histology by Dr. J. S. Edkins and Miss Tweedy. *King's College.*—Third term: Urinary Analysis by Professor Halliburton and Dr. Rosenheim. *Guy's Hospital.*—(*a*) Respiratory Exchange, by Dr. M. S. Pembrey; (*b*) Methods of Investigating Acidosis, by Dr. E. L. Kennaway and Mr. Poulton; (*c*) Investigations of Movements of Alimentary Canal by *X* Rays, by Dr. A. F. Hertz. *St. Bartholomew's Hospital.*—Electro-cardiography, by Dr. J. S. Edkins.

Donation by Sir William Ramsay.

The Senate adopted a vote of thanks to Sir William Ramsay for his generous gift of £500 for books and periodicals for the Chemical Library at University College.

Assistant Professor of Hygiene and Public Health at King's College.

It was resolved to confer the title of Assistant Professor of Hygiene and Public Health upon Dr. David Sommerville.

Regulations for the Second Examination for Medical Degrees (Part II).

It was resolved that the fee of £4 for re-examination in Pharmacology shall also apply to any candidate permitted before 1915, under former regulations, to enter for re-examination in either anatomy or physiology only.

Appointment of Representative.

Dr. T. Buzzard was reappointed governor of the Westminster Hospital Medical School.

Site for the University.

In view of the probable early conference between the Site and Accommodation Committee and the London County Council, the Committee did not think it advisable to make any report as to the desirability of any specific site until such conference had taken place.

Physiological Laboratory.

Professor A. D. Waller, F.R.S., was re-elected director, and Dr. T. L. Mears treasurer, of the Physiological Laboratory for 1913. The report of the Laboratory Committee, which was presented, gave an account of the work done in 1912.

Graham Scholar in Pathology.

Mr. H. S. Warren, demonstrator of bacteriology at the University College Hospital Medical School, has been appointed Graham Scholar in Pathology for the sessions 1913-14 and 1914-15.

Paul Philip Reitlinger Prize.

The Paul Philip Reitlinger Prize, of the value of £30, will be awarded annually on December 3rd, provided there be a candidate of sufficient merit. The prize for 1913 and biennially thereafter will be awarded for the best essay on a literary, historical, or philosophical subject of contemporary interest. The subject chosen by the University for 1913 is the influence of the conception of evolution on moral or social philosophy. In 1914 and bienially thereafter the prize will be awarded for the best essay embodying the result of some research work on a medical subject carried out by the candidate.

Chairmen of Committees.

Dr. S. Russell Wells has been elected Chairman of the Council for External Students, Sir Alfred Pearce Gould, K.C.V.O., M.S., Chairman of the Brown Animal Sanatory Institution Committee and of the Graham Legacy Committee, and Dr. W. P. Herringham, Chairman of the Site and Accommodation Committee.

ONE of the pass lists which we published last week was wrongly headed, Part II of the Second Examination for the M.B. being described as Part I. The names of a certain number of candidates who were successful at this examination were also accidentally omitted. They were as follows:

J. A. W. Robinson, Elisabeth H. Schwab, T. W. Short, B. B. Silcock, J. F. Smith, H. G. Stormer, R. Stowers, E. C. Tamplin, H. W. Taylor, J. W. T. Thomas, W. Thomas, W. H. Thomas, R. R. Thompson, J. W. Wayte, W. R. White-Cooper, A. Willatt, G. C. N. Younger.

UNIVERSITY OF SHEFFIELD.

THE following candidates have been approved at the examinations indicated:

FIRST M.B., CH.B.—Annie Clark, *Ethel M. Mathews, R. H. Rae, *Winifred H. Wells.
SECOND M.B., CH.B.—Lydia M. Henry, Elizabeth E. Jenkins.
FINAL (*Part A only*).—*W. B. Allen, *G. F. Stones, J. R. Turner.
FINAL (*All Subjects*).—†J. E. Stacey, J. Davidson, L. E. Sutcliffe.
D.P.H.—Marie Simpson, C. S. E. Wright.

* Passed with distinction in one or more subjects.
† Second-class honours.

UNIVERSITY OF LIVERPOOL.

Diploma in Ophthalmic Surgery.

THE Diploma in Ophthalmic Surgery, which was established by the University a year or two ago, has been awarded to Mr. C. Alston Hughes.

The curriculum for this diploma includes attendance at a practical and demonstration course dealing with the anatomy, physiology, and histology of the eye, held during the autumn

term; at a similar course on the pathology and bacteriology of the eye, held during the Lent term; at a lecture course on the signs, symptoms, and treatment of diseases of the eye, held partly in the Lent term and partly in the summer term; and clinical instruction on diseases of the eye and errors of refraction during three terms. The examination which has to be passed includes three papers aggregating eight hours and three prolonged oral and practical tests.

ROYAL COLLEGE OF PHYSICIANS OF LONDON.

AN ordinary comitia of the Royal College of Physicians was held on Thursday, July 31st, at 5 p.m., the President, Sir Thomas Barlow, Bart., K.C.V.O., being in the chair.

The President announced the bequest to the College of a gold snuff-box by the late Dr. W. H. Dickinson, and the gift of two letters—one by Dr. W. S. Greenfield, the other by Mrs. Bond.

Admission of Members.

The following gentlemen having passed the required examination were admitted to the Membership of the College:

Percy William Bassett-Smith, C.B., L.R.C.P.; Cecil Clarke, M.D. Lond., L.R.C.P.; Arthur Davies, M.D.Lond., L.R.C.P.; Alfred Hope Gosse, M.B.Camb., L.R.C.P.; Edward Barton Gunson, M.D.Edin.; Abd-el-Aziz Ismail, L.R.C.P.; William Wilson Jameson, M.D.Aberd.; Theodore Stewart Lukis, M.D.Lond.; Charles Henry Godfrey Ramsbottom, M.D.Viet.

Licences to Practise.

Licences to practise physic were granted to eighty-six candidates who had passed the necessary examinations.

Diplomas in Public Health.

Diplomas in Public Health were granted jointly with the Royal College of Surgeons to the following:

E. M. Balthasar, L.R.C.P., M.R.C.S.; A. F. Bell, M.B., B.S.Melb.; W. Bethune, M.B., C.M.Edin.; H. S. Blackmore, L.R.C.P., M.R.C.S.; W. H. Butler, L.R.C.P., M.R.C.S.; J. A. Delmege, L.R.C.P., M.R.C.S.; H. S. Dube, L.M.S.Punjab; W. R. Dunstan, M.B.Lond., L.R.C.P., M.R.C.S.; A. L. Dykes, M.D.Edin.; R. P. Garrow, M.D.Aberd.; A. Gaskell, F.R.C.S.Eng., L.R.C.P.; S. E. Gill, M.D.Lond., L.R.C.P., M.R.C.S.; Christina L. Goode, M.B., B.S.Melb.; C. S. van Renen Harwood, M.B., B.S.Lond., L.R.C.P., M.R.C.S.; Abd-el-Aziz Ismail, L.R.C.P., M.R.C.S.; R. G. Johnson, M.B.Lond., L.R.C.P., M.R.C.S.; P. M. Keane, L.R.C.P. and S.I.; G. A. Kempthorne (Captain R.A.M.C.), L.R.C.P., M.R.C.S.; N. M. Leys, M.B., Ch.B.Glasg.; C. H. Lilley, M.B., Ch.B. St. Andrews; J. A. S. Phillips (Captain I.M.S.), L.R.C.P. and S.Edin., L.F.P. and S.Glasg.; E. S. Phipson (Captain I.M.S.), M.B., B.S.Lond., L.R.C.P., M.R.C.S.; T. W. W. Powell, L.R.C.P., M.R.C.S.; Laura W. Pugh, M.B., Ch.B.Edin.; B. Rai, L.M.S., Punjab; S. Ram, M.B.Lahore; H. G. Sherren (Captain R.A.M.C.), L.R.C.P., M.R.C.S.; G. H. Stevenson, M.B., Ch.B.Edin.; J. Taylor (Captain I.M.S.), M.D.Glasg.

Appointment of College Officers and Examiners.

The following College Officers and Examiners were appointed:

Censors: Sir James Kingston Fowler, K.C.V.O., M.D., William Hale White, M.D., Howard Henry Tooth, C.M.G., M.D., Theodore Dyke Acland, M.D.

Treasurer: Sir Dyce Duckworth Bart, M.D. Emeritus Registrar: Edward Liveing, M.D. Registrar: Joseph Arderne Ormerod, M.D.

Harveian Librarian: Norman Moore, M.D.

Elected Members of the Library Committee: Humphry Davy Rolleston, M.D., Leonard George Guthrie, M.D., Herbert Morley Fletcher, M.D., Raymond H. P. Crawfurd, M.D.

Curators of the Museum: John Mitchell Bruce, M.D., Seymour John Sharkey, M.D., Frederick William Andrewes, M.D., William Hunter, M.D.

Finance Committee: Donald W. C. Hood, C.V.O., M.D., Hector William Gavin Mackenzie, M.D., Sir James Reid, Bart., G.C.V.O., K.C.B., M.D.

Examiners: Chemistry, John Millar Thomson, F.R.S., Hugh C. H. Candy, B.Sc.; Physics, Herbert Stanley Allen, D.Sc., Frederick Womack, B.Sc., M.B.; Practical Pharmacy, Henry Johnstone Campbell, M.D., Robert Briggs Wild, M.D., Reginald Henry Miller, M.D., Arthur Robertson Cushny, M.D., F.R.S., Walter Ernest Dixon, M.D., F.R.S.; Physiology, Leonard Erskine Hill, M.B., F.R.S., John Mellanby, M.D.; Anatomy, William Wright, F.R.C.S., L.R.C.P.; Medical Anatomy and Principles and Practice of Medicine, Lauriston Elgie Shaw, M.D., Hector W. G. Mackenzie, M.D., Frederick Walter Mott, M.D., Judson Sykes Bury, M.D., Arthur Francis Voelcker, M.D., Cyril Ogle, M.D., Raymond H. P. Crawfurd, M.D., Sir Bertrand E. Dawson, K.C.V.O., M.D., Wilfred John Harris, M.D., Harold Batty Shaw, M.D.; Midwifery and Diseases Peculiar to Women, Charles Montague Handfield-Jones, M.D., John Shields Fairbairn, M.B., Herbert Williamson, M.B.Camb., Cuthbert H. J. Lockyer, M.D., John Benjamin Hellier, M.D. Public Health: Part I, Henry Richard Kenwood, M.B.; Part II, Louis C. Parkes, M.D. Tropical Medicine: Bacteriology, Frederick William Andrewes, M.D.; Diseases and Hygiene of the Tropics, William John Ritchie Simpson, C.M.G., M.D.

Murchison Scholarship: Francis de Haviland Hall, M.D., Humphry Davy Rolleston, M.D.

Communications.

Communications were received from the secretary of the College of Surgeons, dated July 16th, reporting proceedings of the council of that College on July 10th; and from the Dean of the Faculty of Medicine, University of Edinburgh, dated July 3rd, stating that the Faculty recommended that the Murchison Memorial Scholarship should be awarded to Alan W. S. Sichel, B.A., M.B., Ch.B.

Award of Baly Medal.

On the recommendation of the council, the Baly Medal was awarded to John Scott Haldane, M.D., F.R.S.

Election of Representative.

Dr. F. W. Andrewes was re-elected a representative of the College on the executive council of the Imperial Cancer Research Fund.

Reports.

Reports were received from the representative of the College on the General Medical Council and from the Committee of Management, dated July 8th, recommending that Exeter School, Northampton and County School, Northampton, and Taunton School should be added to the list of institutions recognized by the Examining Board for instruction in chemistry and physics.

The quarterly report of the College Finance Committee, the annual reports of the Library Committee, the curators of the Museum, and the Imperial Cancer Research Fund were presented.

Books and other publications presented during the quarter were received, and it was directed that the thanks of the College should be conveyed to the donors. The President then dissolved the comitia.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

AN ordinary council was held on July 31st, Sir Rickman J. Godlee, President, in the chair.

Grant of Diplomas.

Diplomas were granted to 85 candidates found qualified for the Membership at the recent examinations; and to 29 found qualified for the diploma in Public Health, two of whom were women.

Recognition of Institutions.

The following institutions were added to the list recognized by the Conjoint Examining Board in England for instruction in chemistry and physics: Exeter School; Northampton and County School, Northampton; Taunton School.

Election of Examiners.

Mr. Arthur Rendle Short, F.R.C.S., Bristol, was elected a member of the Board of Examiners in Anatomy and Physiology for the Fellowship for the ensuing year in the vacancy among the Examiners in Physiology. Mr. Norman Godfrey Bennett was elected an Examiner in Dental Surgery for the period of five years.

ROYAL COLLEGE OF SURGEONS IN IRELAND.

AT a special meeting of the Council on July 21st, with the President (Mr. R. Dancer Purefoy) in the chair, Dr. Evelyn John Evatt was elected Professor of Anatomy in the Schools of Surgery. Professor Evatt received the earlier part of his medical education in these schools, and then went to Newcastle-on-Tyne and graduated M.B., B.S. in the University of Durham in 1900. He was then appointed Demonstrator of Anatomy and four years later Lecturer in Applied Anatomy at the University College, Cardiff. In 1909 he was appointed Professor of Anatomy at Manitoba Medical College, Winnipeg, Canada. He has done much original work in anatomy and embryology.

CONJOINT BOARD IN SCOTLAND.

THE following candidates have been approved at the examinations indicated:

FIRST COLLEGE.—A. B. Black, D. M. Black, M. Campbell, L. W. Hughes, J. G. M. Macaulay, J. W. Morris, R. Pollok, R. Woodside, D. M. Stewart, J. W. Irvine, J. F. Campbell, W. F. G. Radford.

SECOND COLLEGE.—C. S. Baxter, J. S. M. Connell, R. A. Cooper, A. Gaston, G. M. Harley, C. Harris, W. P. H. Lightbody, A. Mathewson, J. R. B. Robb, T. M. Saptarshi, J. F. Kerr, T. D. Renwick, W. G. Anderson, Lizzie O'Flynn, A. W. M'Gregor, J. E. Ainsley, E. A. Neilson, M. A. White, B. St. A. Ajaji Young.

THIRD COLLEGE.—E. Dias, J. Gilchrist, R. B. Lilley, J. M'Cartney, J. M'Farlane, J. Martin, J. L. Pierce, W. Turner, S. N. Toulmin, W. D. Bathgate, L. O. Weinman, P. Chisholm, T. E. Lawson, J. Berry, D. O. M. Page, W. H. O'Grady, C. T. Darwent, R. A. L. Guthrie, E. Annequin, F. A. V. Denning.

FINAL.—R. J. Croxford, B. Kanshosh, C. J. Lacayo, E. V. W. Mellad, E. L. A. M'Cardel, W. W. M'Cowat, E. E. Owens, G. A. Platt, V. H. Wardle, J. Watt, G. W. Fleming, S. E. Jones, H. G. Hankins, J. M. Milne, C. H. N. Baker, C. C. Forsyth, C. V. Bailey, J. B. Donaldson, S. M. Fisher, W. Murphy, F. G. Gibbs, J. E. L. Keyes, F. R. Lucas, J. R. Menzies, W. A. Rees, I. C. Mackenzie, C. Cosgrove, R. D. Clayton.

LONDON SCHOOL OF TROPICAL MEDICINE.

THE following candidates were approved at the end of the forty-second session:

*E. C. Perkins, H. H. G. Knapp (Captain I.M.S.), *C. N. Davis, *J. E. H. Gatt (Captain R.A.M.C.), *W. E. Glover, J. Hanington, Mrs. D. Parsons, W. L. Webb, G. Dunderdale, B. B. Paymaster (Captain I.M.S.), R. Trudinger, W. E. S. Digby, H. North, J. A. Valentine, R. P. Ratnakar, G. da Silva, H. H. Stewart, P. J. Zepeda, J. M. Cure, A. Robertson, E. V. Smith, C. E. F. Monat-Biggs, H. E. Fretz, J. B. Dalzell Hunter (Captain I.M.S.), R. H. Miller, J. Dunlop, C. R. Patton, G. Arnott, C. S. G. Mylrea, C. J. H. Pearson, J. Y. Ferguson, B. W. F. Wood.

* With distinction.

Medical News.

THE Home Secretary has received a number of applications from medical men for the two new inspectorships under the Cruelty to Animals Act, 1876 (Vivisection), but it appears that the salary offered (£500, rising by annual increments of £20 to £600) has not secured a sufficient choice of candidates who possess the necessary scientific qualifications required for the work and are not disqualified by the holding of licences under the Act or otherwise. He has, therefore, decided to offer a salary of £800. The appointments will be for a term of five years in the first instance. Fuller particulars can be obtained from the Private Secretary, Home Office, London. Candidates who have already applied will be reconsidered without any further application. New applications should be sent in not later than August 25th.

DR. MICHAEL FRANCIS HESSION, Tuam, co. Galway, has resigned the appointment of Medical Adviser to the Irish National Insurance Commissioners.

WE are asked by the secretary of Section I (Anatomy and Embryology) of the International Congress of Medicine to state that the name of Professor G. D. Thane was inadvertently omitted from the list of vice-presidents given in the short account of the Section which appeared in our issue of July 26th.

THE Agent-General for New South Wales has received the following telegram, dated Sydney, August 2nd, from the Premier of the State: "The Director-General of Public Health reports that the small-pox epidemic now existing in Sydney is of very mild type, similar to that in Canada. There have been 400 cases, no deaths, and no patient has been dangerously ill."

THE late Mr. J. H. Targett, obstetric surgeon and lecturer at Guy's Hospital, left estate of the gross value of £35,722, of which the net personalty has been sworn at £35,474. He left his shares in the Clinical Research Association (Limited) to the treasurer of Guy's Hospital, for the benefit of the pathological department of the medical school of that hospital.

THE twenty-fourth Universal Cookery and Food Exhibition will be held in the Royal Horticultural Hall, Westminster, S.W., from October 28th to November 1st. The exhibition is under the patronage of Queen Alexandra and several other members of the Royal Family. The president is Lieutenant-Colonel Sir Charles Frederick, K.C.B., G.C.V.O. Among the honorary vice-presidents is Sir James Crichton-Browne.

AT its last meeting the Southern Branch of the British Medical Association adopted the following resolution: "This meeting of the Southern Branch of the British Medical Association records its deep sense of the very great loss which the profession has sustained by the death of Sir Jonathan Hutchinson, F.R.S., and of the inestimable benefits he has conferred on mankind in every branch of science. The members beg to offer their sincere sympathy to his family."

ON July 25th a new wing of the Hospital for Epilepsy, Maida Vale, was opened by the Princess Louise (Duchess of Argyll), who was accompanied by the Duke. They were received by the chairman and members of the committee of management and by the medical staff, the architect (Mr. Keith D. Young), and others. Among those present was Sir Rickman J. Godlee, President of the Royal College of Surgeons of England. The institution was founded in 1866, and, as it was being constantly called upon to extend its work, the present site was acquired ten years ago. The buildings have recently been completed at a total cost of about £35,000. Dr. George Ogilvie, Senior Physician, in proposing a vote of thanks to Her Royal Highness Princess Louise, said the hospital was certainly not a large one—it contained only seventy-five beds—but good work had been done, not only in the present hospital, but in the old one, and with the new wing they would be able further to increase their knowledge of diseases of the nervous system and their power of relieving and curing them. He referred to the case of a patient who was admitted many years ago suffering from constant and unbearable headaches, convulsive seizures, and progressive blindness, due to pressure from an intracranial tumour. It was deemed advisable by the medical staff to have a surgical operation performed. The operation, which was performed by Mr. Godlee (as he was then), brought about cessation of the headaches and relief of the other troubles. That, said Dr. Ogilvie, was the first operation of the kind ever performed in this country, if not in the world.

Letters, Notes, and Answers.

☞ *Queries, answers, and communications relating to subjects to which special departments of the* BRITISH MEDICAL JOURNAL *are devoted will be found under their respective headings.*

ANSWERS.

EARTH CLOSETS.

E. L. B.—(1) An illustrated pamphlet on the arrangement and management of earth closets, suitable to be put into the hands of village people, will shortly be published by the *Medical Officer*, 36-38, Whitefriars Street, Fleet Street, E.C. (2) The painting of window-frames with paraffin is recommended to drive away flies.

LETTERS, NOTES, ETC.

THE ANNUAL MEETING.

DR. A. STAYT DUTTON (Oxford) writes: Judging by the accounts in the BRITISH MEDICAL JOURNAL and other journals, the annual meeting at Brighton has been one of an especially successful and pleasant nature, and no doubt a number of members who, like myself, were unable to be present, and who have experienced the health-giving properties of the climate and hospitality of the popular Sussex town, are gratified to find that such is the unanimous opinion. Brighton is not by any means alone in the capability of providing effective climatic and social allurements, as England is particularly fortunate in possessing in almost all directions attractive, well kept, and healthful seaside resorts. Nevertheless, while this is so, it is likely to be the case that the meeting of the Association recently terminated will have effect in adding another jewel to the crown of the Queen of Watering Places.

ADDRESSES ON ALCOHOL.

THE arrangements for the large number of addresses by medical men on the subject of alcohol, which were delivered in a number of towns within easy reach of Brighton, on July 20th, and to which we referred last week, were made, we learn, not by the National Temperance League, but by two special committees, one of which was formed of medical men, and the other of clerics and laymen. The chairman of the former was Mr. George Morgan, and its honorary secretary Dr. Rowland Fothergill.

THE MEDICAL DIRECTORY FOR 1914.

F.R.C.S. writes: In the issue of the JOURNAL of August 2nd you print a notice from Messrs. Churchill *re* the *Medical Directory* for 1914. May I, in your columns, make an appeal to the editors of the *Directory* for increased efficiency of the 1914 edition. Up to the year 1913 all the past appointments which had been held by a practitioner were inserted in the *Directory*, but last year only three appointments were allowed entry, however many any man might have held. By this action the *Medical Directory* ceases to be the nearest possible approach to an official record of a man's professional status and career, as it has been in the past. There must be many others beside myself, who having held a large number of important hospital appointments, object to all but three of these being ruthlessly deleted from a volume of the importance of the *Medical Directory*. A man's claim to specialize in medicine or surgery or any branch thereof is recognized to depend largely upon the education and experience he has acquired from holding hospital appointments. Evidence of such a claim has hitherto been obtainable by reference to the *Directory*, but under the new scheme there is a levelling up of those who have and have not spent many laborious years in learning their job. I enclose my card.

SOME ASPECTS OF INTERNAL SECRETION IN DISEASE.

DR. P. ARTHUR HENDLEY (Littleport), in a letter expressing his interest in Professor Murray's address in medicine at Brighton, thinks that much light might be thrown on exophthalmic goitre, for which he prefers the term hyperthyroidism, if the gland were watched with sufficient care at the change from childhood to adolescence. He believes that it would then be possible to prevent primary hypertrophy of the thyroid, which he considers must take place before hyperthyroidism becomes established.

SCALE OF CHARGES FOR ADVERTISEMENTS IN THE BRITISH MEDICAL JOURNAL.

	£	s.	d.
Seven lines and under	0	5	0
Each additional line	0	0	8
A whole column	3	10	0
A page	10	0	0

An average line contains six words.

All remittances by Post Office Orders must be made payable to the British Medical Association at the General Post Office, London. No responsibility will be accepted for any such remittance not so safeguarded.

Advertisements should be delivered, addressed to the Manager, 429, Strand, London, not later than the first post on Wednesday morning preceding publication, and, if not paid for at the time, should be accompanied by a reference.

NOTE.—It is against the rules of the Post Office to receive *postes restante* letters addressed either in initials or numbers.